run 5

THE JOURNAL OF STRATEGIC STUDIES GROUP

Issue 19

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- **Khe Sanh** - holding the fort... U.S. Marine style!
- **Coral Sea Replay** - game designer *hoist with his own petard*
- **Warship Graphics** - using the Paint and Pack routines in the *CAW Construction Kit*
- Plus *Warlords II* previewed

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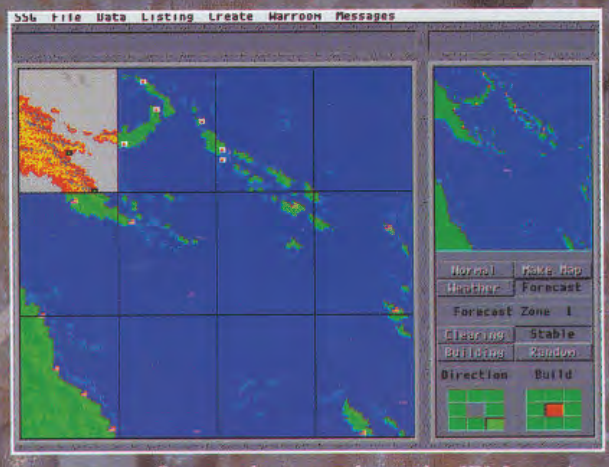

Screen shots are from the IBM version

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When we find the time, we intend to upgrade all the scenario disks from back issues into the new formats and allow new users to acquire them or current users to upgrade to them. We'll keep the cost as low as possible; it will depend on how much time it takes and how many scenarios we can fit onto a disk.

Upgrading to New Machines

We have received a large number of requests from our users to upgrade a particular title from one machine to another. In response to this demand, we have decided upon the following policy.

Any title from our range may be upgraded from one machine to another for a cost of half the retail price of the new version. You must send us the original program disk and the front page of the manual from that game. We will send you a complete copy of the new version of the game.

For example, if you wish to upgrade a C-64 version of *Halls of Montezuma* to the IBM/Tandy version, you should send us the original C-64 disk, the front page of the manual and the appropriate cheque, money order or MC/Visa number.

North American users must send their components and funds to our US Office. Everybody else must use our Australian Office.

EDITOR'S CHANCE

ON TRACK AGAIN. . .

This issue of *Run 5* goes to press exactly 89 days after Issue 18. Not only is that on time, it means I get to keep my job...

The last three months have been incredibly hectic here at SSG. As usual we have too many projects on at once and we have been trying to get all of them completed before the Origins gaming convention at Fort Worth in July. Deserving of special mention is *Warlords II*. Apart from the brilliant artwork featured on this issue's cover, Steve Fawkner, Roger Keating *et al* have almost finished an entirely new game (see the article in this issue). I'm impressed and I think you will be too.

Where are all the letters I've been expecting? *Run 5* is back on schedule now, so keep those letters rolling in telling us what you think of our games and the magazine scenarios. I'm also expecting reader input on scenarios for upcoming issues. Tell us what you want to see and I promise I'll do my best.

IN THIS ISSUE. . .

The scenarios for this issue, two for each title are Khe Sanh and Perryville. Khe Sanh is one of the few good stand-up fights from the Vietnam War, and its final phase, Operation Pegasus lends itself well to simulation. At Khe Sanh, unlike the bulk of the war, the NVA played the US at their own game, with predictable results.

Perryville is another case of Union blunders in 1862 so all you northern boys should jump straight in with the variant scenario which shows how it could have been (at least with the benefit of hindsight).

Ian Trout has put together a detailed tutorial on the techniques of painting ships and incorporating them into a *Carriers at War* scenario. You can be sure he's done a better job with this

article than he did with the Yorktown and Lexington in the Coral Sea Replay. The proudly autocratic regime here at SSG does not permit me to gloat over his crushing defeat!

Next issue I intend to explore another could-have-been situation; Grant vs Lee on the North Anna. Lee set a trap for Grant who saw his peril in time and set off on another flank march. If he hadn't, at least he would have had Lee coming onto *his* guns.

The *Battlefront* scenario will be Sicily, with Patton and Montgomery racing each other to Messina. Patton's route was *only* twice as long so of course he got there first!

There will be a hypothetical scenario for *Carriers at War;* the Japanese invasion of Midway was resounding success and the next port of call will be Hawaii... scheduled invasion date September 1st, 1942.

JUST RELEASED. . .

Since the publication of Issue 18, we have released the following games.

Carriers at War Construction Kit (IBM)

Carriers at War (Mac)

Decisive Battles Vol III (Mac)

ABOUT TO BE RELEASED. . .

We expect to release the following titles in the upcoming months.

Warlords II (IBM and Mac)

Carriers at War II (IBM and Mac)

MacArthur's War (Mac)

Rommel (Amiga)

Continued on p. 48

Two Peculiar Features in the *Carriers at War Construction Kit*

(SSG Games don't have bugs!)

Symptom. The packing routines don't work. That's the cp.exe program you use to pack your graphics into a form that the caw.exe program can use.

Solution. The CAW directory must be a root directory on the hard drive.

For example, if you install CAW on your C: drive as C:\CAW, then the CAW directory is a root directory and the cp.exe will work fine.

If, say, you install CAW on your C: drive as C:\GAMES\CAW, then CAW is not the root directory (GAMES is the root directory here) and the cp.exe program won't run.

Symptom. The mouse disappears from the screen when you are in the Time Create screen, but only if both day and hour values are 0 (zero).

Solution. Complete the time entry as usual (all the other keys work fine) and then type

(Alt) S <enter>

(Alt) Q <enter>

The first command saves the entries made to the screen and the second command quits the program.

Now type

create

from the CAW or CREATE directories and all your problems are solved!

Both these features have been corrected in Version 2.01.

Mistakes in the Construction Kit Manual

p.133 The references to Section (v) in the Fire and Explosions paragraphs on that page are incorrect. The correct Section is (vi).

p.173 The reference to task group bases in the Change TG Mission description should be ignored. They are a relic!

CURRENT VERSION NUMBERS FOR ALL SSG GAMES

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All (1.1), C64 (1.1), IBM (1.0)

Carriers at War Construction Kit
IBM (2.01)

Europe Ablaze
All (1.0), C64 (1.0)

Battlefront
All (1.0), C64 (1.0)

Russia
All (1.0), C64 (1.0)

Battles in Normandy
All (1.0), C64 (1.0)

Halls of Montezuma
All (1.0), C64 (1.0), Mac (1.33), IBM (3.2*), GS (1.1), Amiga (1.2)

Decisive Battles of the American Civil War (Vol I)
All (1.0), C64 (1.0), Mac (1.2), IBM (2.2)

Rommel
All (1.0), C64 (1.0), Mac (1.33), IBM (3.2*)

Decisive Battles of the American Civil War (Vol II)
All (1.0), C64 (1.0), IBM (2.2)

MacArthur's War
All (1.0), C64 (1.0), IBM (3.2*)

Decisive Battles of the American Civil War (Vol III)
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Fire King
C64 (1.0), IBM (1.0)

Gold of the Americas
Mac (1.2), IBM (1.01), GS (1.1), Amiga (1.0), Atari ST (1.0)

Panzer Battles
All (1.0), C64 (1.0), Mac (1.2), IBM (3.2*), GS (1.1), Amiga (1.2)

Warlords
IBM (2.1), Amiga (2.1), Mac (1.0)

Notes

* The difference between the .2 and .1 versions is the addition of the + and - key functions which allow you to vary the speed of the unit animation with "Full Map" graphics. This is especially useful with fast 386/486 machines.

THE Q STORE

RUN 5

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Customers outside North America or Australia should add $5.00 per game for surface shipping or $10.00 per game for airmail shipping.
Florida residents add 6%.

LETTERS TO THE EDITOR

Sir,

I have been playing wargames and simulations in one media or another for more than twenty five years. For some time now I have been looking for an outstanding battle simulator/game for my Tandy 1000SX (IBM clone). At last I've found it: DBACW!! Sorry it took me so long but I was reluctant to purchase DBACW for two reasons.

First, although the package states "Tandy" on the outside it doesn't say "Supports TGA or 16 colors". Unfortunately I've bought many games that say "Tandy" on the label and then find they only run in the four color CGA mode.

Second, reviews in a certain gaming magazine discouraged me. Having now fought several battles and gotten familiar with the player interface, cheered when my troops pursued vigorously and groaned when they failed to follow orders, I wish someone would lock the reviewer in a room and force him to play "Risk" for the rest of his life. On the one hand the "command perspective" was too realistic. Then he didn't like it with all the options and variants because it was too much like other "God's-eye-view" wargames.

Your game/simulation is great. The graphics on my computer are terrific. The "command perspective" is frustratingly delightful. The number of options and variants are amazing. WarPlan™ and WarPaint™ are the frosting on the cake. As you say they "will keep the game fresh for years to come".

From one very satisfied customer to everyone involved in getting this exceptional game/simulation/product to the public, many, many thanks!!

Sincerely

Edward O. Judd

Dona Ana, New Mexico

USA

Continued on p. 20

OPERATION PEGASUS

Relief of Khe Sanh Combat Base

April 1-10, 1968

A Scenario for the Battlefront Game System

by Stephen Hand

The military value of Khe Sanh Combat Base, 10km from the Laotian border and 23km south of the DMZ was questionable for either side in the Vietnam War. Whatever the military arguments, however, both sides knew that the US could not afford a "Dien Bien Phu". Khe Sanh had to be held, and so this US Marine outpost become the centre of a 77 day siege. In the course of those 77 days the area around the combat base became the most heavily bombed target in history and by the end of the siege the Americans had ushered in a new style of warfare.

Khe Sanh Combat Base was set up by members of the Green Berets in 1962 as a base for patrols against North Vietnamese supply lines, the so-called Ho Chi Minh trail. In January 1966 the North Vietnamese Army (NVA) began shelling the camp and as enemy pressure mounted, the Green Berets were replaced, in January 1967, by Marines. A runway was built at Khe Sanh but despite the seeming permanence of the Base it was dominated by hills to the north and relied, for drinking water, on the Quang Tri River which passed though enemy held territory before reaching Khe Sanh.

By December 1967 it was clear that the North Vietnamese were planning something more serious than their previous, casual harassment. Two NVA Divisions had been detected to the west of Khe Sanh and patrols in the hills to the northwest of the Base reported greater than normal sniper fire. On one occasion a section of wire was removed from the Base perimeter during the night.

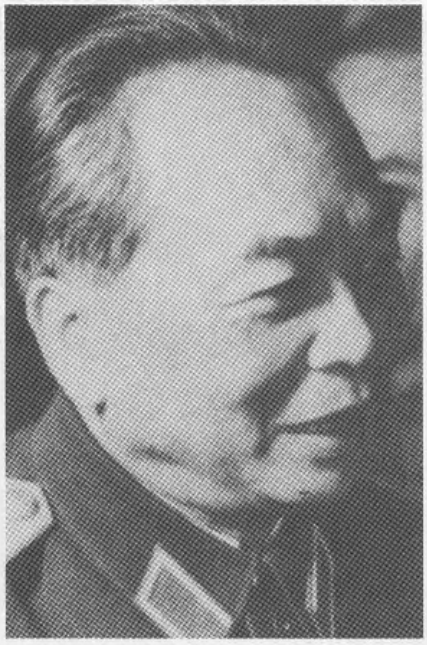
Despite the evidence of activity the enemy were still elusive. A five day battalion strength patrol failed to make contact with a single North Vietnamese. On January 2nd 1968 five North Vietnamese officers dressed in marine uniforms were killed near the outer defences. The Base commander, Col. David Lownds feared that an attack was imminent. Reinforcements were rushed into Khe Sanh, the 26th Marines were brought up to their full strength of 3 battalions and Lownds was given extra artillery.

It was apparent to Lownds that if he allowed the enemy to take the hills surrounding Khe Sanh he risked being pounded into surrender as the French had been at Dien Bien Phu. Therefore companies were dispatched to hold the vital hilltops of 881S, 861, 558 and 950.

On January 14th and 19th patrols from India Company on Hill 881S were ambushed and on January 20th a company strength patrol got into a severe firefight in the valley between 881S and 881N. The company was ordered back to its hilltop and in the early hours of January 21st the North Vietnamese 325th Division launched an unsuccessful assault on Hill 861.

One of the reasons why the assault was unsuccessful was that the Marines knew it was coming. Only a few hours before, a Lieutenant Tonc had surrendered and given details of the imminent attacks as well as the entire Tet offensive. Lownds chose to act on the prisoner's warning and found the attacks proceeding just as he had been told they would. At 0530 hours the bombardment commenced. Consisting largely of rocket fire, the barrage exploded barrels of fuel, artillery ammunition and, perhaps worst of all, the tear gas supply, necessitating the wearing of gasmasks by all personnel.

At 0630 hours the NVA 304th Division attacked Khe Sanh village and were only repulsed with the help of a heavy



General Giap
The victor of Dien Bien Phu and the architect of the Tet Offensive

Read This Before You Play

The Battlefront Game System was originally designed solely to simulate WWII battles and so it shows the great flexibility of the system that it has been successfully used to cover battles from the Mexican-American War of 1847 to Vietnam. In the two Khe Sanh scenarios I have dealt with the unprecedented mobility of the American forces, resulting from their use of transport helicopters, in an interesting way. You will notice that there are 2 OBs given for the US 1st AirCav both in the magazine and entered in the database of both scenarios. The first OB gives the units of the 1st AirCav as airborne troops while the second OB gives the units as ground units.

Each battalion (with the exception of the helicopter gunship asset) is listed twice, once in each OB. The purpose of this is so that the player can modify the proportion of units of the 1st AirCav which appear as airborne reinforcements. You will notice that each unit is only active on one of the two OBs. The first number given for arrival turn for each unit gives the historical situation where the majority of units of the 1st AirCav were choppered behind enemy lines.

Should you wish to change the mode of any unit (from airborne to ground or vice-versa) you must remember to change the arrival times on *both* OBs to the number after the slash. If you change only one unit's arrival time you will end up with 2 identical battalions in play which is obviously absurd. Remember, whatever you do, each unit of the 1st AirCav should have an arrival turn of 95 in either one or the other of the two 1st AirCav OBs. You should also feel free to change the arrival hex of airborne battalions. The US helicopters were capable of inserting troops anywhere on the map. I feel sure that someone out there can come up with a better plan than General Tolson.

Players may note the absence of the hilltop garrisons which were so vital in the defence of Khe Sanh. As these units were only company strength they would be represented in game terms by a 1 or 2 strength point unit and be destroyed almost instantly in minor combat. Hence it has been decided to incorporate the hilltop companies into the main Khe Sanh defences.

artillery barrage from the Base. In mid afternoon the assault was repeated with similar results. Lownds decided that the village defenders could not resist another assault and evacuated them by helicopter into the Base.

Faced by two divisions the defenders in Khe Sanh Combat Base waited for the inevitable assault. For days they were pounded by artillery and rocket fire. Then, on January 29th the first attacks of the Tet Offensive drew public attention away from the Marines in Khe Sanh.

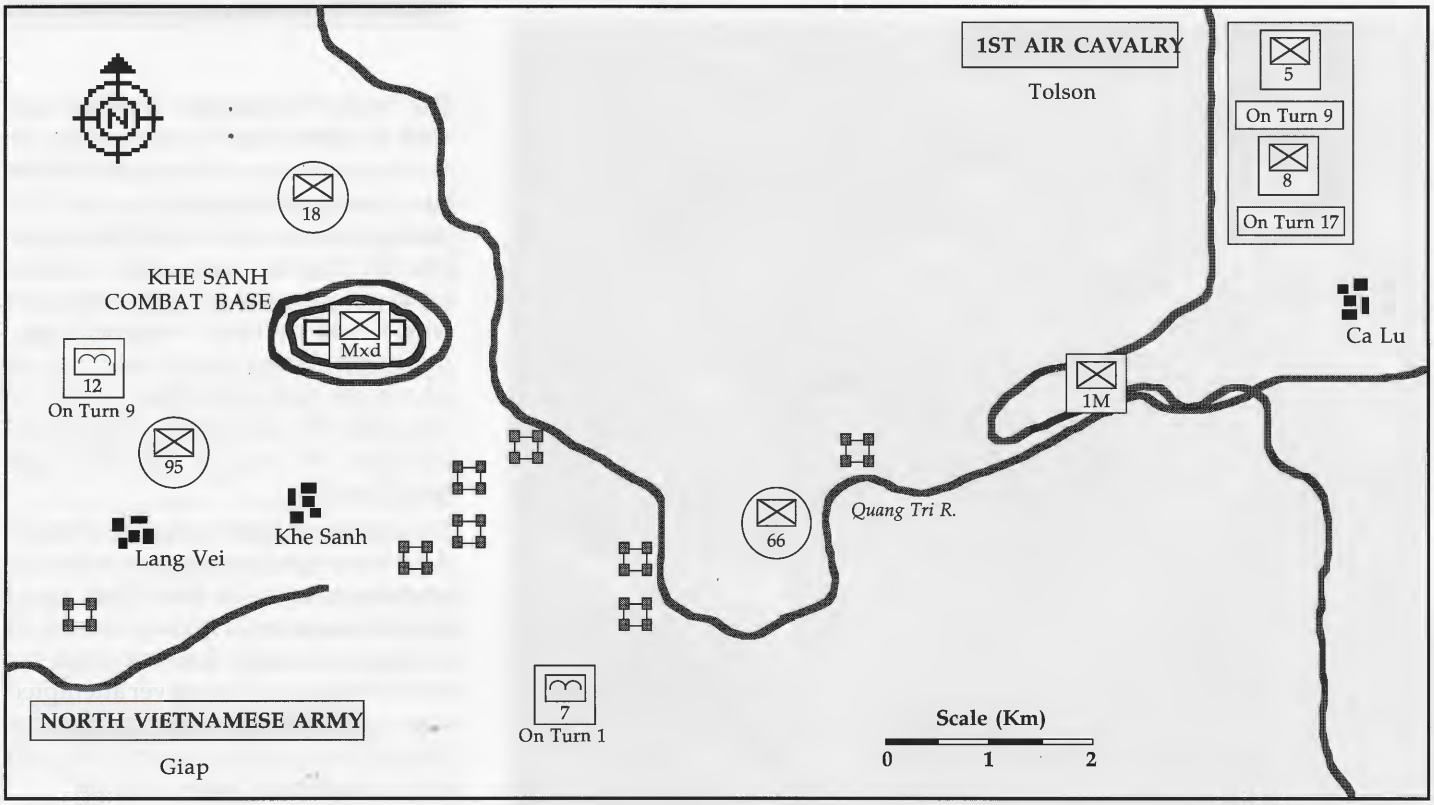
Unlike the siege, however, the majority of actions during the Tet Offensive reached rapid conclusions, with the notable exception of the old capital of Hue (see Halls of Montezuma) where the entire city was not reclaimed until February 23rd.

Finally, on February 5th the NVA launched another unsuccessful attack on the defenders of Hill 861. In some places the North Vietnamese actually reached the Marine lines and were repelled in what one marine described as a "bloody, waterfront bar-room brawl". This was closely followed on February 7th by the successful storming of Lang Vei Special Forces Base to the southwest of Khe Sanh. For the first time at Lang Vei the NVA revealed their armour, Russian PT-76 tanks.

Once again a comparative lull fell over Khe Sanh, punctuated by the 2 500 rounds a week fired into Khe Sanh by the NVA and the 1000 tons of bombs a day dropped by the B-52s on suspected NVA positions. The Marines occasionally sent out patrols to the east and southeast in an attempt to discover the extent of NVA positions in this area. This was discontinued after February 25th when Bravo Company was ambushed and routed with heavy losses.

The Ontos

Nicknamed the pig by the men on the ground, this machine was designed as a tank killer but was more frequently used as an anti personnel six-gun. Also one of my favourite models when I was small..



Situation Map for the Khe Sanh Scenario

The next major NVA assault was on February 29th when they attacked the ARVN rangers positions at the south-eastern corner of the perimeter. The assaults continued until March 1 and were all repulsed with heavy losses. Throughout March the bombardment of Khe Sanh and the air strikes on the NVA positions continued unabated.

As March wore on no further assaults took place. On the 23rd General Giap withdrew two regiments and the HQ of the 325th Division. Through this action Giap accepted the inevitability of the relief of Khe Sanh. The marines inside the wire began to send out patrols again and against the thinner NVA cordon they inflicted heavy casualties in a number of firefights.

On the 26th of March command of operations in the Khe Sanh area passed to Major General John Tolson, commander of the 1st AirCav and in charge of Operation Pegasus, the relief of Khe Sanh. The relief effort had been on the drawing board since January 25th but had been postponed because of the Tet Offensive. By the end of March the relief force was ready to go and on April 1 the 1st Marines began the

Highway 9
This picture illustrates some of the difficulties encountered by the relief column during Operation Pegasus

On Patrol
These marines are clearing out a gully just off Highway 9. The necessity of such operations made the advance slow going.

ground drive up highway 9 to Khe Sanh.

The NVA had been expecting a relieving force to attempt to clear Highway 9 for some weeks and they were well prepared to oppose it when it came. NVA troops were dug in in the jungle along the fringes of the highway some of which they had mined. By far the greatest impediment to a quick thrust up Highway 9, however, was the abysmal state of the highway itself. Despite the name, Highway 9 was little better than a four wheel drive track. Each section of road had to be cleared of enemy before it could be repaired by engineer units. Obviously this looked like being a long and costly exercise.

What the NVA hadn't counted on was that the relieving force would contain the 1st AirCav. Their defences were set up to counter a conventional ground thrust. Tolson's plan was to outflank the NVA defences by landing helicopter borne infantry behind enemy positions, forcing them to retire or be crushed between the outflanking force and the advancing 1st Marines. By nightfall on April 1 units of the 1st AirCav had captured several key points on Highway 9. By the 5th of April they were able to storm the old French fort and thus secure the vital road junction between Highway 9 and the road to Khe Sanh.

The tactic that so bemused the NVA was where the Americans, rather than land in open country on the highway, would land in the jungle on either side and sweep towards it. This had the effect of flushing the NVA into the open where they were vulnerable.

Further air landings on April 6th near the perimeter of the combat base had a similar effect, the NVA were caught between the landing force and the base and found themselves driven onto US guns. Also on April 6th the first company of ARVN troops were choppered into Khe Sanh itself.

The North Vietnamese were broken. With the three regiments remaining in the Khe Sanh area they simply did not have the manpower to cope with US units popping up all along Highway 9. The 1st Marines were able to make rapid progress and on April 11th Highway 9 was declared reopened. Sporadic skirmishing continued for some days as the remnants of the NVA force retreated into Laos but for all practical purposes the siege of Khe Sanh had been lifted.

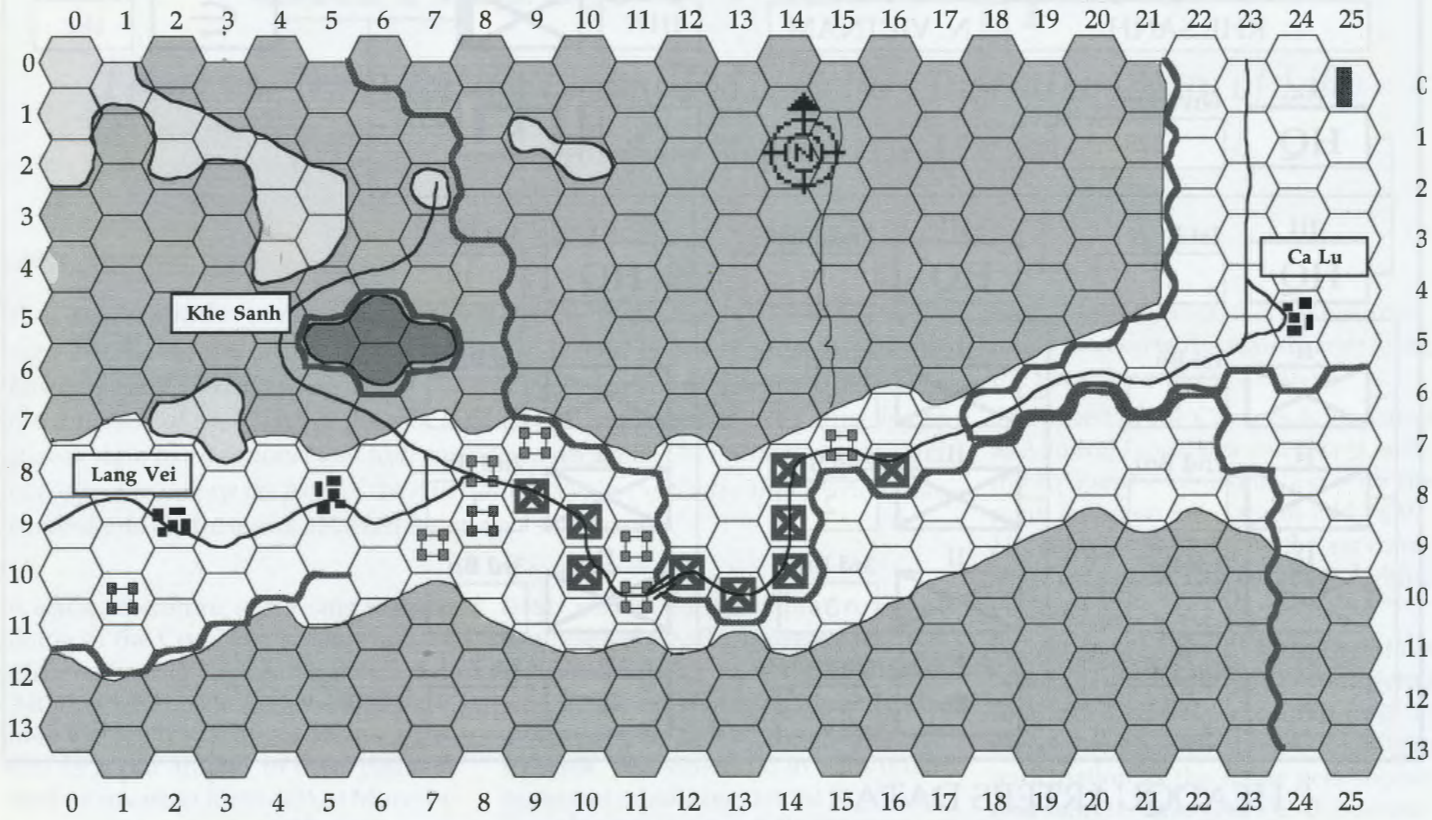
The argument continues as to whether the North Vietnamese ever seriously intended to take Khe Sanh. They failed to make use of the 324th Division which was known to be in the area just to the north of the base. They never attempted to cut off the base's water supply even though they could have done this with only a moderate degree of effort.

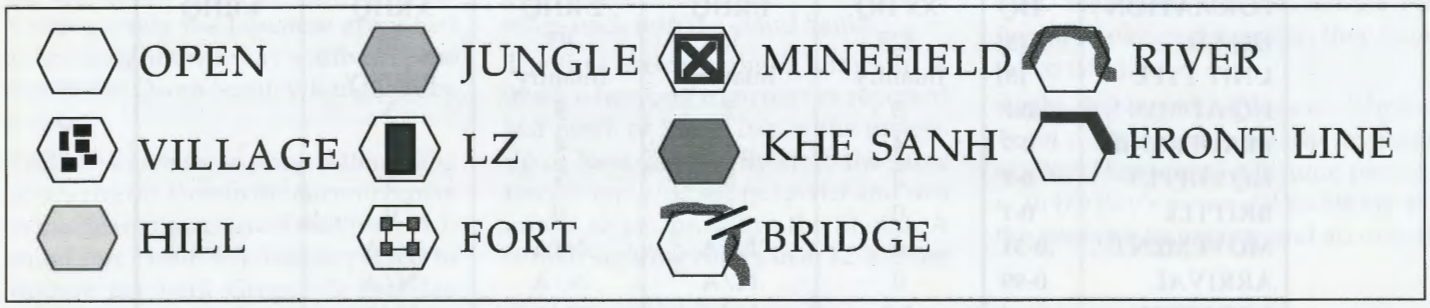
After the first assaults in January had failed to capture the strategically vital hills to the northwest of Khe Sanh the efforts of the NVA seemed to have been based around pinning down as many American men and planes as possible. The rapidity with which North Vietnamese resistance crumbled during Operation Pegasus suggests that they were not really interested in slugging it out with US troops.

The success of Operation Pegasus, however, should not be described simply in terms of North Vietnamese failure. Clearly the NVA dispositions suggested that they were expecting a conventional ground assault and furthermore they were expecting to be able to delay that assault and inflict heavy casualties on US units. It was the tremendous flexibility resulting from the use of overwhelming numbers of helicopters that totally bemused the NVA leaders and led to the rout of their forces.

Both through their use of overwhelming fire support to defend Khe Sanh against many times their own number and their revolutionary use of helicopters to outflank enemy positions the US army had ushered in a new style of warfare. It was not, however, to be enough to win them the war.

KHE SANH - Map





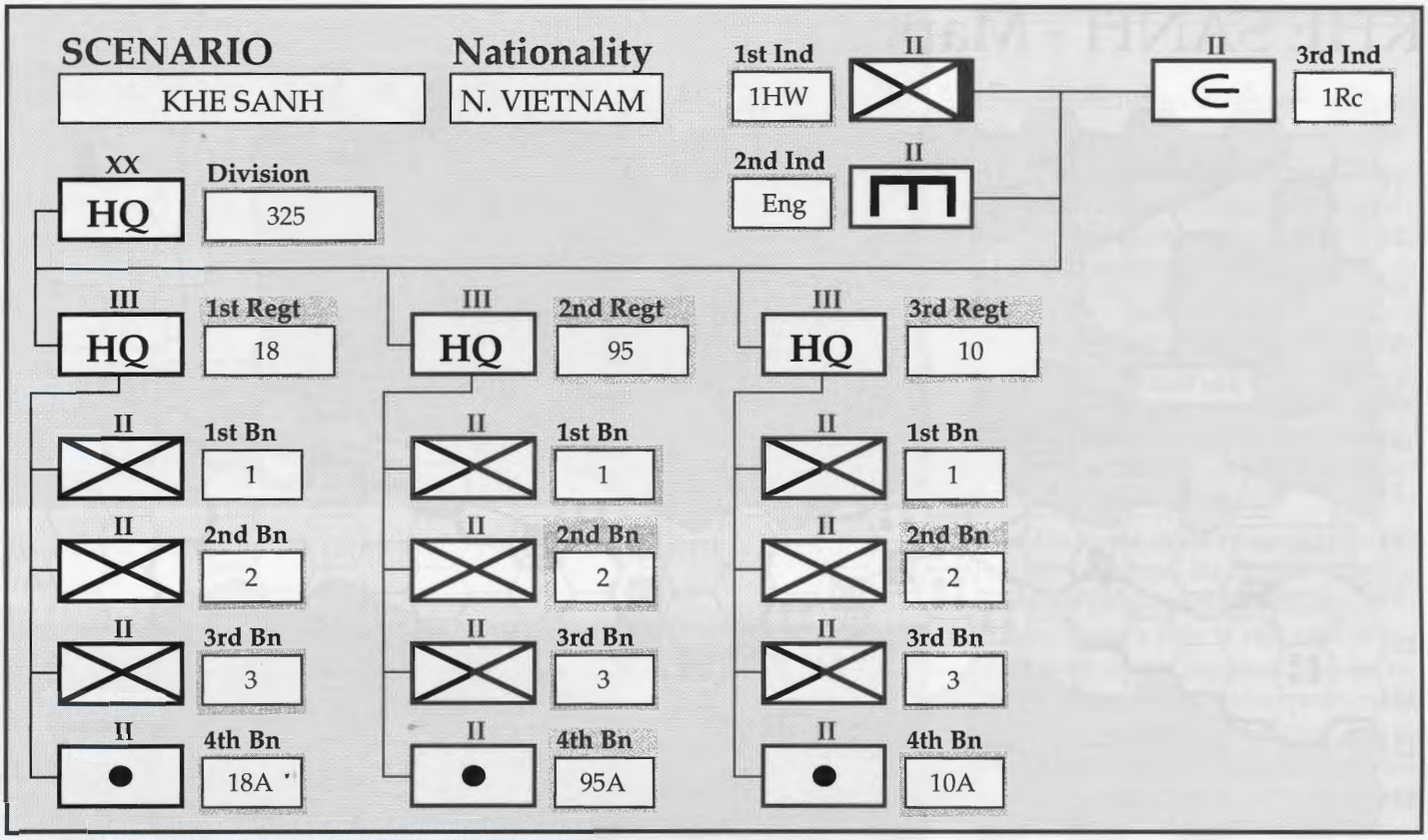
CREATING THE SCENARIOS

This scenario contains two major variants. The first covers the historical Operation Pegasus where the US relief force was opposed by only three regiments of North Vietnamese. It is of course entirely possible that instead of removing troops during March 1968 the North Vietnamese could have reinforced the two divisions already in the Khe Sanh area with the nearby 324th Division. Of course, this would have increased the North Vietnamese troop density and consequently made them better targets for the B-52's. This is the premise behind the second scenario. Only the North Vietnamese OB, the objectives and the game length are altered for the second scenario. In each case values in brackets refer to the second scenario. If there is only one value for a particular piece of information, then that value applies to both scenarios. At this point some of you might be wondering why there are two sets of data for the US 1st AirCav and why some units have two arrival turns separated by a slash. If you are confused by this then you have not read the "Read This Before You Play" section. Shame on you! go back and read it immediately.

If this is the first time you have tried to transfer a magazine scenario onto a save-game disk, we recommend you follow these directions. The letters in parentheses after each heading refer to the corresponding section in any of the *Battlefront Game System* manuals.

Note that if you are building up the scenario on an IBM/Tandy version of the game, there are a couple of additional data entries to be made. These are noted where applicable. Furthermore, there is some additional information for IBM users at the end of this section. Be sure to read it, especially if you have an EGA/VGA card and want to take advantage of our "full map" graphics. Issue 14 of *Run 5* contains a detailed guide on the use of "full map" graphics on the IBM.

Macintosh users should follow the instructions in their game manual. In

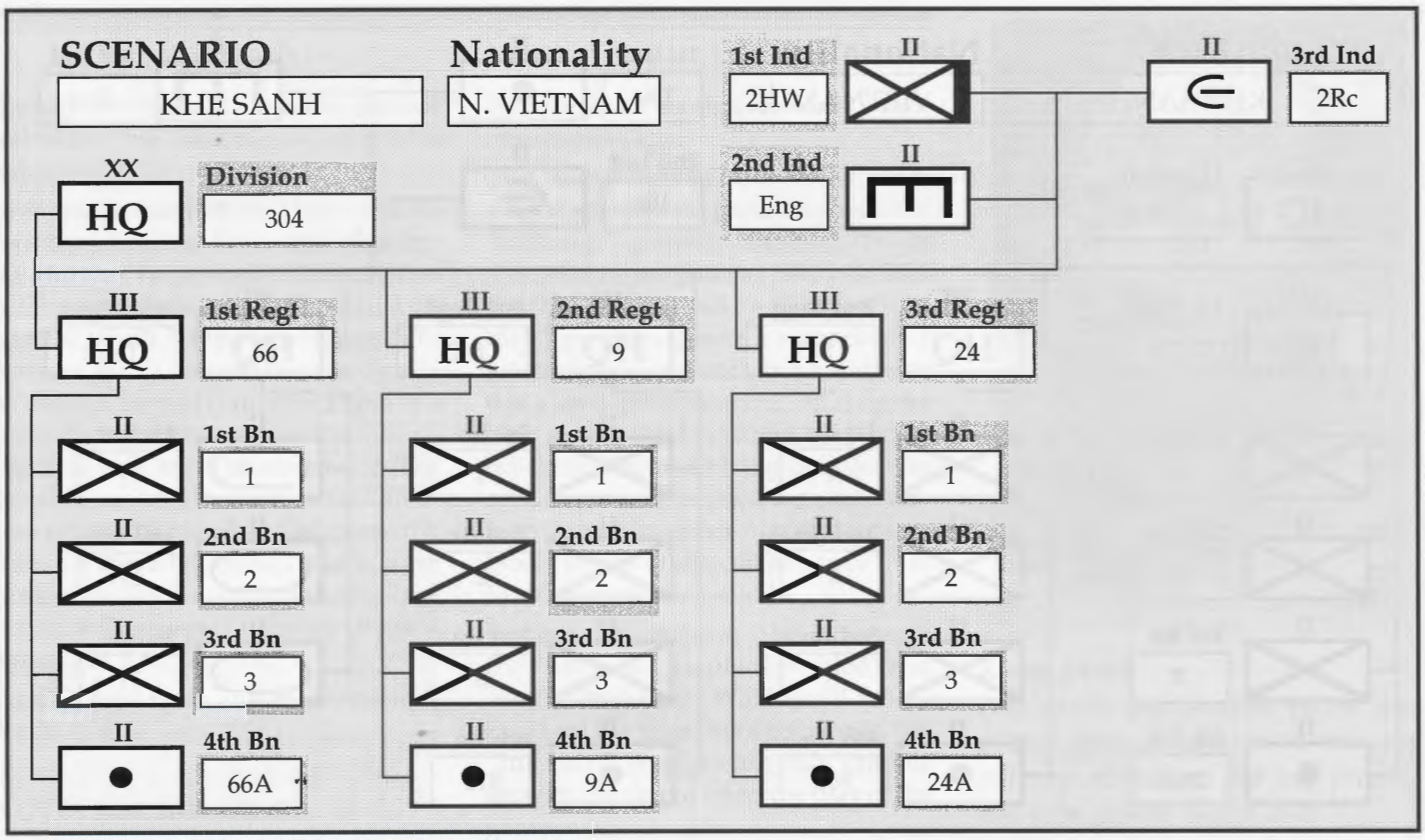


HEADQUARTERS DATA

FORMATION	HQ	XX HQ	1/RHQ	2/RHQ	3/RHQ	4/RHQ
HQ I.D.	[8]	325	18	95	10	
UNIT TYPE	[8]	Infantry	Infantry	Infantry	Infantry	
HQ ADMIN	0-7	5	5	5	5	
LEADERSHIP	0-7	4	4	4	4	
HQ SUPPLY	0-7	3	5	5	5	
BRITTLE	0-1	0	0	0	0	
MOVEMENT	0-31	6	N/A	N/A	N/A	
ARRIVAL	0-99	0	N/A	N/A	N/A	
LOCATION	(x,y)	0,8	N/A	N/A	N/A	

BATTALION DATA

FORMATION	II/III	1/1	2/1	3/1	4/1	1/2	2/2	3/2	4/2	1/3	2/3	3/3	4/3	1/4	2/4	3/4	4/4	1/-	2/-	3/-	4/-
UNIT I.D.	[3]	1	2	3	18A	1	2	3	95A	1	2	3	10A					1HW	Eng	1Rc	
LOCATION	(x,y)	7,2	5,3	4,4	4,3	7,9	3,7	0,9	0,9	13,7	14,8	14,10	12,11					2,7	3,6	0,0	
CLASS	0-13	0	0	0	13	0	0	0	13	0	0	0	13					4	7	13	
MODE	0-3	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	
EQUIPM'T	0-31	1	1	1	4	1	1	1	4	1	1	1	4					5	9	3	
MOVEMENT	0-31	6	6	6	4	6	6	6	4	6	6	6	4					5	6	4	
ARRIVAL	0-99	0	0	0	0	0	0	1	1	95(0)	95(0)	95(0)	95(0)					0	0	95(0)	
MAX STREN.	0-15	9	9	9	9	9	9	9	9	9	9	9	9					9	2	9	
INIT. STREN.	0-15	9	9	9	9	9	9	9	9	9	9	9	9					9	2	9	
RATING	0-15	8	8	8	10	8	8	8	10	8	8	8	10					9	10	10	
RANGE	0-15	0	0	0	8	0	0	0	8	0	0	0	8					1	0	6	
FATIGUE	0-7	7	7	7	7	7	7	7	7	7	7	7	7					7	7	7	
EXPERIENCE	0-7	5	5	5	5	5	5	5	5	5	5	5	5					5	5	5	
ATTACHM'T	0-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					1	1	1	

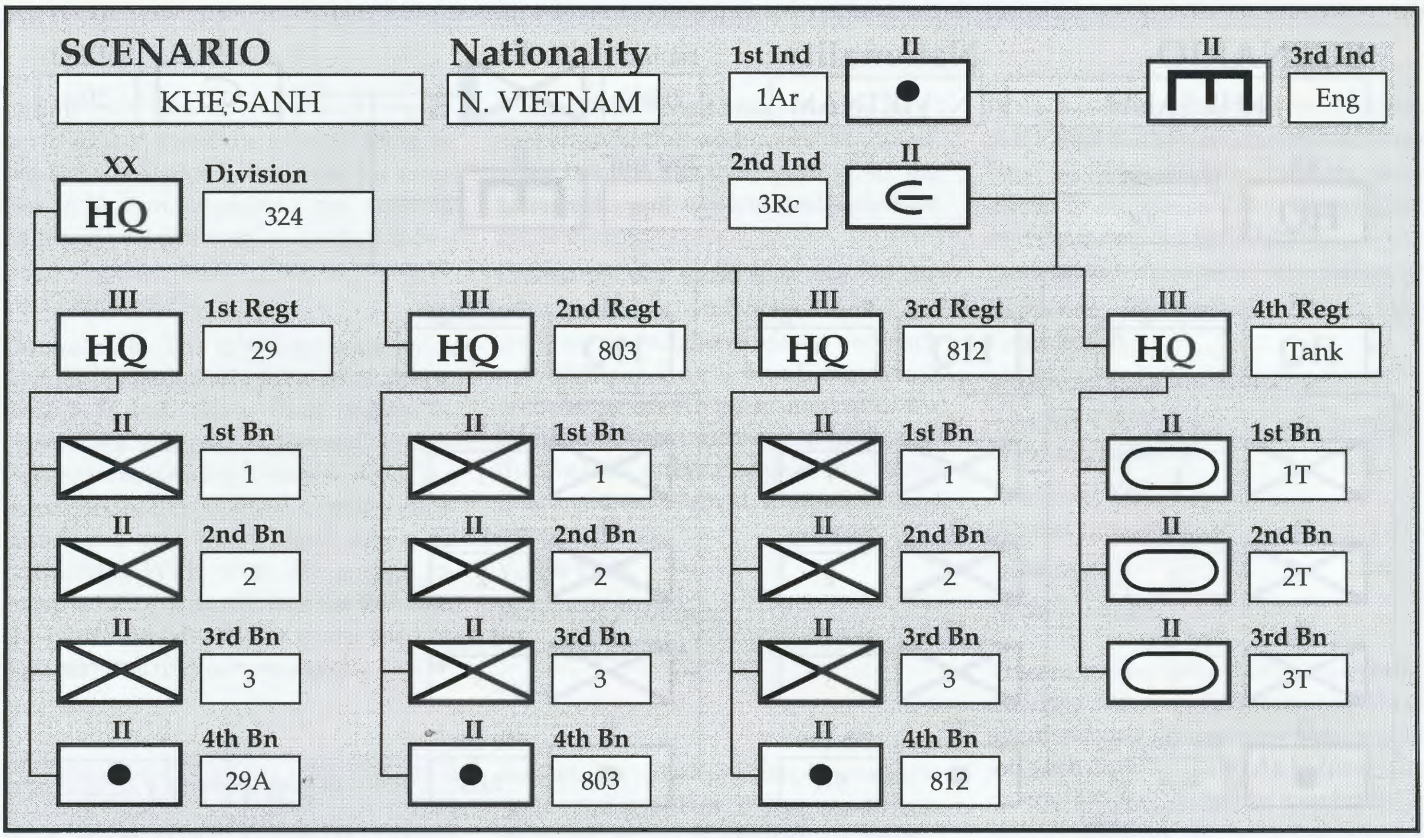


HEADQUARTERS DATA

FORMATION	HQ	XX HQ	1/RHQ	2/RHQ	3/RHQ	4/RHQ
HQ I.D.	[8]	304	66	9	24	
UNIT TYPE	[8]	Infantry	Infantry	Infantry	Infantry	
HQ ADMIN	0-7	5	5	5	5	
LEADERSHIP	0-7	4	4	4	4	
HQ SUPPLY	0-7	3	5	5	5	
BRITTLE	0-1	0	0	0	0	
MOVEMENT	0-31	6	N/A	N/A	N/A	
ARRIVAL	0-99	0	N/A	N/A	N/A	
LOCATION	(x,y)	0,7	N/A	N/A	N/A	

BATTALION DATA

FORMATION	II/III	1/1	2/1	3/1	4/1	1/2	2/2	3/2	4/2	1/3	2/3	3/3	4/3	1/4	2/4	3/4	4/4	1/-	2/-	3/-	4/-
UNIT I.D.	[3]	1	2	3	66A	1	2	3	9A	1	2	3	24A					2HW	Eng	2Rc	
LOCATION	(x,y)	15,7	14,9	12,10	11,10	5,8	6,8	7,7	6,10	9,1	9,2	10,3	10,2					11,8	9,8	11,9	
CLASS	0-13	0	0	0	13	0	0	0	13	0	0	0	13					4	7	13	
MODE	0-3	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	
EQUIPM'T	0-31	1	1	1	4	1	1	1	4	1	1	1	4					5	9	3	
MOVEMENT	0-31	6	6	6	4	6	6	6	4	6	6	6	4					5	6	4	
ARRIVAL	0-99	0	0	0	0	95(0)	95(0)	95(0)	95(0)	95(0)	95(0)	95(0)	95(0)					0	0	95(0)	
MAX STREN.	0-15	9	9	9	9	9	9	9	9	9	9	9	9					9	2	9	
INIT. STREN.	0-15	9	9	9	9	9	9	9	9	9	9	9	9					9	2	9	
RATING	0-15	8	8	8	10	8	8	8	10	8	8	8	10					9	10	10	
RANGE	0-15	0	0	0	8	0	0	0	8	0	0	0	8					1	0	6	
FATIGUE	0-7	7	7	7	7	7	7	7	7	7	7	7	7					7	7	7	
EXPERIENCE	0-7	5	5	5	5	5	5	5	5	5	5	5	5					5	5	5	
ATTACHM'T	0-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					1	1	1	

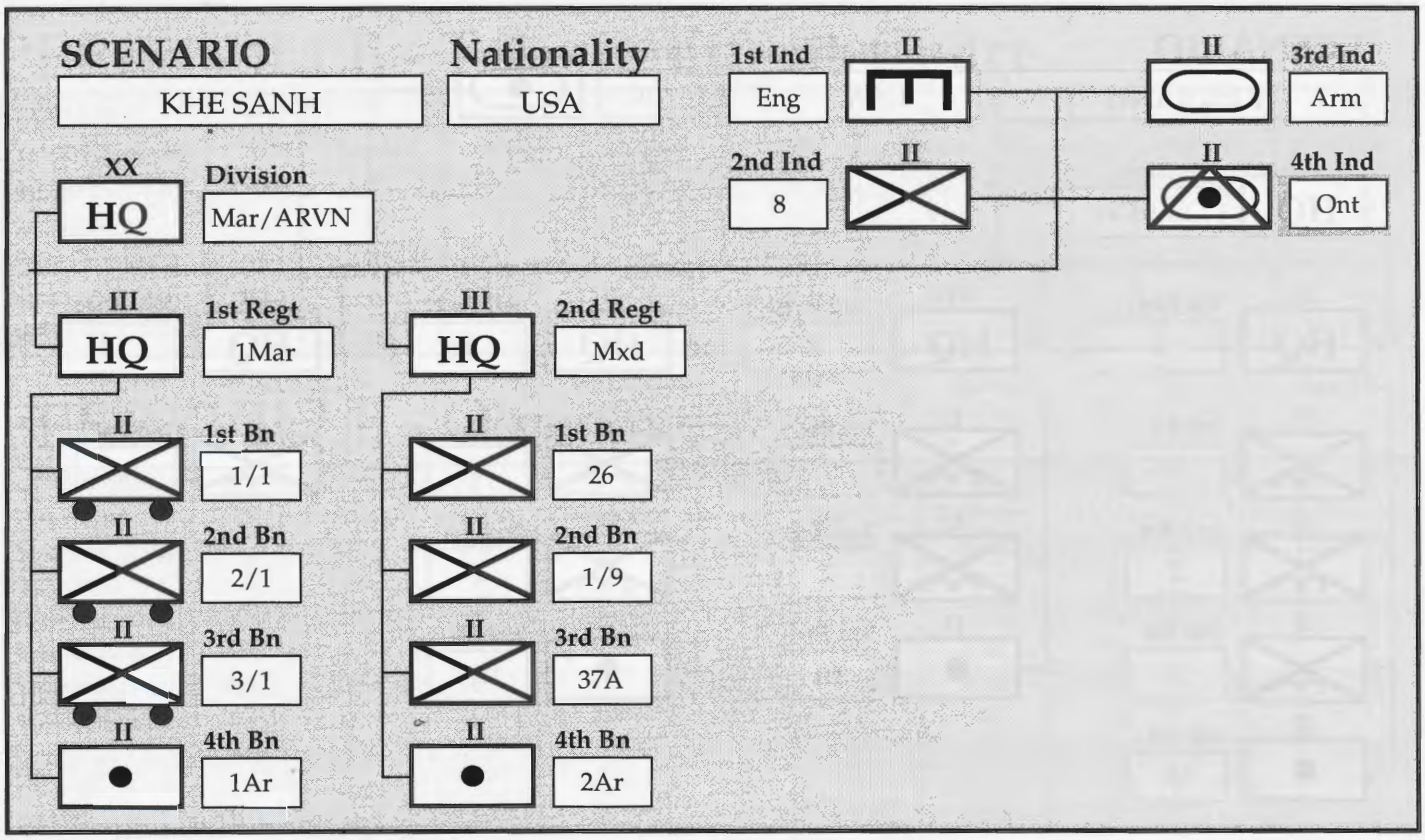


HEADQUARTERS DATA

FORMATION	HQ	XX HQ	1/RHQ	2/RHQ	3/RHQ	4/RHQ
HQ I.D.	[8]	324	29	803	812	Tank
UNIT TYPE	[8]	Infantry	Infantry	Infantry	Infantry	Armoured
HQ ADMIN	0-7	5	5	5	5	6
LEADERSHIP	0-7	4	4	4	4	5
HQ SUPPLY	0-7	3	5	5	5	4
BRITTLE	0-1	0	0	0	0	0
MOVEMENT	0-31	6	N/A	N/A	N/A	N/A
ARRIVAL	0-99	95(0)	N/A	N/A	N/A	N/A
LOCATION	(x,y)	2,0	N/A	N/A	N/A	N/A

BATTALION DATA

FORMATION	II/III	1/1	2/1	3/1	4/1	1/2	2/2	3/2	4/2	1/3	2/3	3/3	4/3	1/4	2/4	3/4	4/4	1/-	2/-	3/-	4/-
UNIT I.D.	[3]	1	2	3	29A	1	2	3	803	1	2	3	812	1T	2T	3T		1Ar	3Rc	Eng	
LOCATION	(x,y)	4,2	3,1	2,2	2,1	1,0	1,1	1,2	2,3	0,5	1,3	1,4	0,4	0,9	0,9	0,9		0,9	0,9	0,3	
CLASS	0-13	0	0	0	13	0	0	0	13	0	0	0	13	11	11	11		13	13	7	
MODE	0-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	
EQUIPM'T	0-31	1	1	1	4	1	1	1	4	1	1	1	4	13	13	13		4	3	9	
MOVEMENT	0-31	6	6	6	4	6	6	6	4	6	6	6	4	12	12	12		4	4	6	
ARRIVAL	0-99	95(0)	95(0)	95(0)	95(0)	95(0)	95(0)	95(0)	95(0)	95(0)	95(0)	95(0)	95(0)	95(1)	95(1)	95(1)		95(2)	95(1)	95(0)	
MAX STREN.	0-15	9	9	9	9	9	9	9	9	9	9	9	9	3	3	3		9	9	2	
INIT. STREN.	0-15	9	9	9	9	9	9	9	9	9	9	9	9	3	3	3		9	9	2	
RATING	0-15	8	8	8	10	8	8	8	10	8	8	8	10	8	8	8		10	10	10	
RANGE	0-15	0	0	0	8	0	0	0	8	0	0	0	8	1	1	1		8	6	0	
FATIGUE	0-7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		7	7	7	
EXPERIENCE	0-7	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		5	5	5	
ATTACHM'T	0-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		1	1	1	

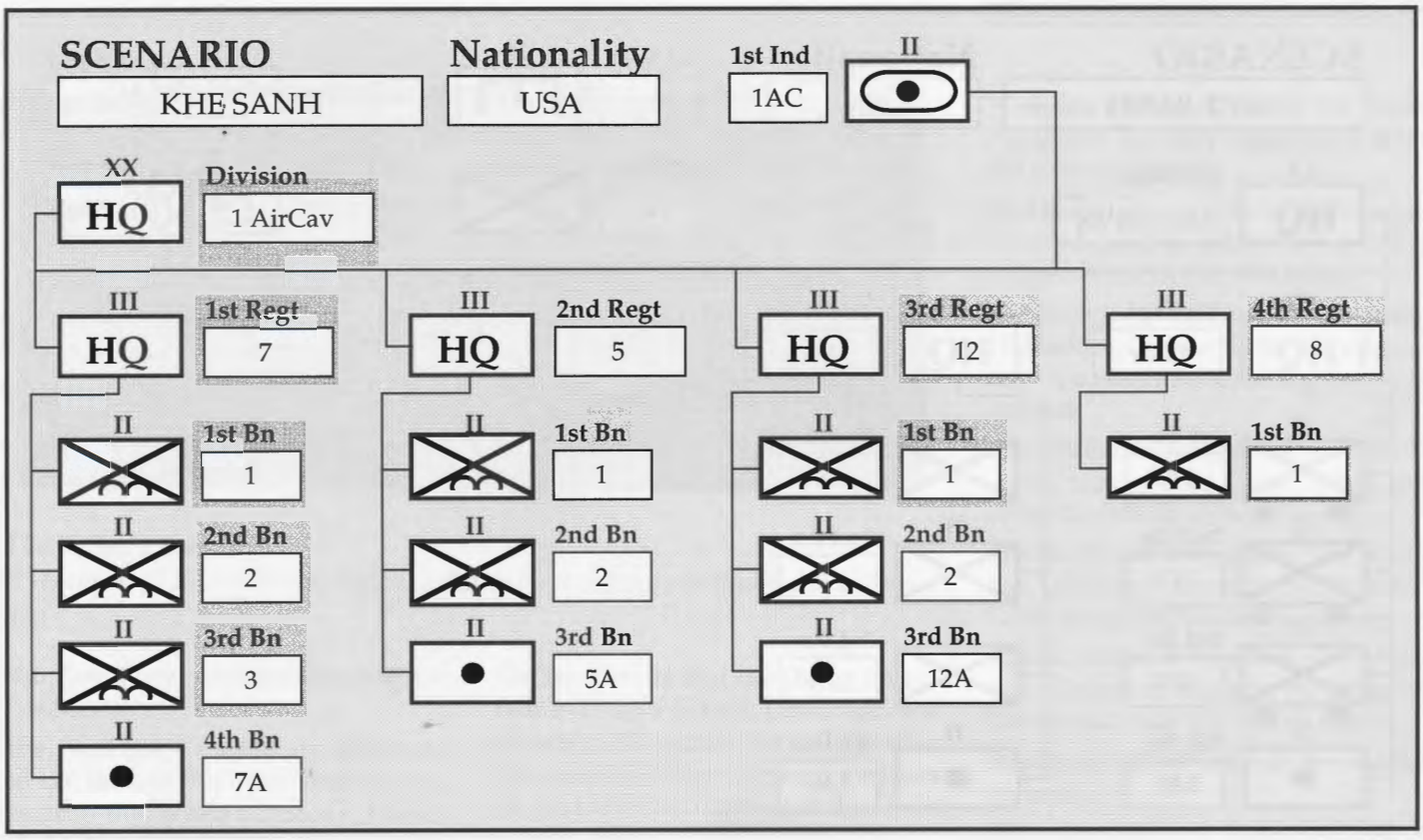


HEADQUARTERS DATA

FORMATION	HQ	XX HQ	1/RHQ	2/RHQ	3/RHQ	4/RHQ
HQ I.D.	[8]	Mar/ARVN	1Mar	Mxd		
UNIT TYPE	[8]	Marine	Marine	Marine		
HQ ADMIN	0-7	6	6	4		
LEADERSHIP	0-7	6	6	5		
HQ SUPPLY	0-7	7	7	7		
BRITTLE	0-1	0	0	0		
MOVEMENT	0-31	20	N/A	N/A		
ARRIVAL	0-99	0	N/A	N/A		
LOCATION	(x,y)	24,5	N/A	N/A		

BATTALION DATA

FORMATION	II/III	1/1	2/1	3/1	4/1	1/2	2/2	3/2	4/2	1/3	2/3	3/3	4/3	1/4	2/4	3/4	4/4	1/-	2/-	3/-	4/-
UNIT I.D.	[3]	1/1	2/1	3/1	1Ar	26	1/9	37A	2Ar									Eng	8	Arm	Ont
LOCATION	(x,y)	20,6	21,6	23,0	23,4	6,5	5,5	6,6	7,5									22,6	25,0	19,6	23,5
CLASS	0-13	1	1	1	13	0	0	0	13									7	1	11	10
MODE	0-3	0	0	0	0	0	0	0	0									0	0	0	0
EQUIPM'T	0-31	10	10	10	2	1	1	1	8									9	10	6	7
MOVEMENT	0-31	20	20	20	10	0	0	0	0									10	20	16	16
ARRIVAL	0-99	0	0	0	0	0	0	0	0									0	21	0	0
MAX STREN.	0-15	9	9	6	9	9	9	9	9									9	3	6	6
INIT. STREN.	0-15	9	9	6	9	9	9	9	9									9	3	6	6
RATING	0-15	12	12	12	12	12	12	10	12									12	12	15	12
RANGE	0-15	0	0	0	12	0	0	0	12									0	0	1	1
FATIGUE	0-7	7	7	7	7	7	7	7	7									7	7	7	7
EXPERIENCE	0-7	6	6	6	5	6	6	4	5									6	5	6	6
ATTACHM'T	0-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A									1	1	1	1

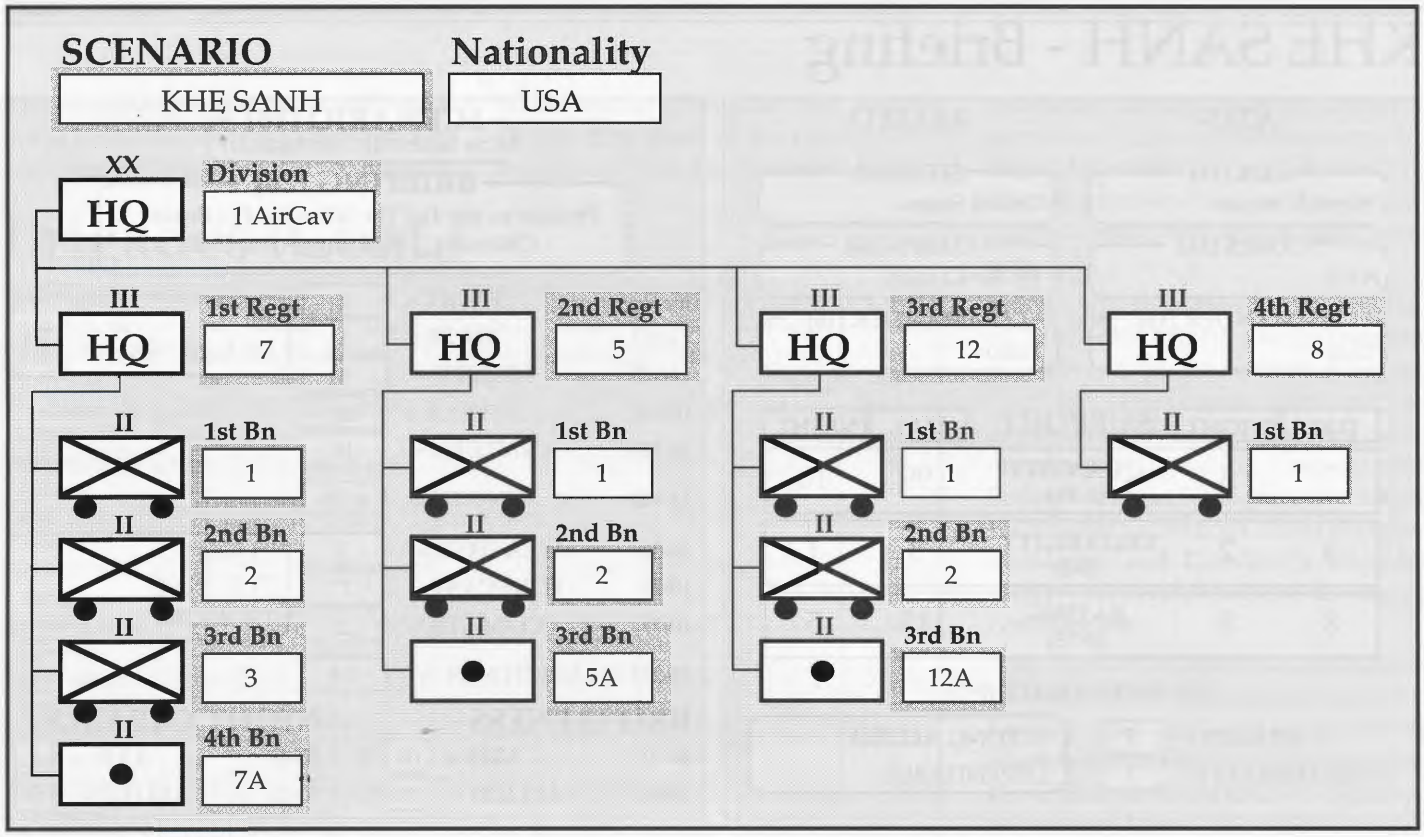


HEADQUARTERS DATA

FORMATION	HQ	XX HQ	1/RHQ	2/RHQ	3/RHQ	4/RHQ
HQ I.D.	[8]	1AirCav	7	5	12	8
UNIT TYPE	[8]	AirCav	AirCav	AirCav	AirCav	AirCav
HQ ADMIN	0-7	7	5	5	5	5
LEADERSHIP	0-7	5	5	5	5	5
HQ SUPPLY	0-7	7	7	7	7	7
BRITTLE	0-1	0	0	0	0	0
MOVEMENT	0-31	6	N/A	N/A	N/A	N/A
ARRIVAL	0-99	1	N/A	N/A	N/A	N/A
LOCATION	(x,y)	12,13	N/A	N/A	N/A	N/A

BATTALION DATA

FORMATION	II/III	1/1	2/1	3/1	4/1	1/2	2/2	3/2	4/2	1/3	2/3	3/3	4/3	1/4	2/4	3/4	4/4	1/-	2/-	3/-	4/-
UNIT I.D.	[3]	1	2	3	7A	1	2	5A		1	2	12A		1				1AC			
LOCATION	(x,y)	10,12	11,12	12,12	11,13	12,7	13,7	12,8		2,5	2,6	1,5		1,4				12,8			
CLASS	0-13	3	3	3	13	3	3	13		3	3	13		3				12			
MODE	0-3	1	1	1	2	1	1	2		1	1	2		1				1			
EQUIPM'T	0-31	11	11	11	2	11	11	2		11	11	2		11				12			
MOVEMENT	0-31	6	6	6	4	6	6	4		6	6	4		6				31			
ARRIVAL	0-99	1/95	1/95	1/95	2/95	95/9	95/9	95/9		12/95	9/95	9/95		95/17				1			
MAX STREN.	0-15	9	9	9	9	9	9	6		9	9	3		9				9			
INIT. STREN.	0-15	9	9	9	9	9	9	6		9	9	3		9				9			
RATING	0-15	10	10	10	12	10	10	12		10	10	12		10				15			
RANGE	0-15	0	0	0	12	0	0	12		0	0	12		0				1			
FATIGUE	0-7	7	7	7	7	7	7	7		7	7	7		7				7			
EXPERIENCE	0-7	5	5	5	5	5	5	5		5	5	5		5				6			
ATTACHM'T	0-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A				1			



HEADQUARTERS DATA

FORMATION	HQ	XX HQ	1/RHQ	2/RHQ	3/RHQ	4/RHQ
HQ I.D.	[8]	1AirCav	7	5	12	8
UNIT TYPE	[8]	Infantry	Infantry	Infantry	Infantry	Infantry
HQ ADMIN	0-7	7	5	5	5	5
LEADERSHIP	0-7	5	5	5	5	5
HQ SUPPLY	0-7	7	7	7	7	7
BRITTLE	0-1	0	0	0	0	0
MOVEMENT	0-31	20	N/A	N/A	N/A	N/A
ARRIVAL	0-99	0	N/A	N/A	N/A	N/A
LOCATION	(x,y)	24,2	N/A	N/A	N/A	N/A

BATTALION DATA

FORMATION	II/III	1/1	2/1	3/1	4/1	1/2	2/2	3/2	4/2	1/3	2/3	3/3	4/3	1/4	2/4	3/4	4/4	1/-	2/-	3/-	4/-
UNIT I.D.	[3]	1	2	3	7A	1	2	5A		1	2	12A		1							
LOCATION	(x,y)	23,0	23,0	23,0	23,0	23,0	23,0	23,0		23,0	23,0	23,0		23,0							
CLASS	0-13	1	1	1	13	1	1	13		1	1	13		1							
MODE	0-3	0	0	0	0	0	0	0		0	0	0		0							
EQUIPM'T	0-31	10	10	10	2	10	10	2		10	10	2		10							
MOVEMENT	0-31	20	20	20	10	20	20	10		20	20	10		20							
ARRIVAL	0-99	95/1	95/1	95/1	95/1	9/95	9/95	9/95		95/13	95/9	95/9		17/95							
MAX STREN.	0-15	9	9	9	9	9	9	6		9	9	3		9							
INIT. STREN.	0-15	9	9	9	9	9	9	6		9	9	3		9							
RATING	0-15	12	12	12	12	12	12	12		12	12	12		12							
RANGE	0-15	0	0	0	12	0	0	12		0	0	12		0							
FATIGUE	0-7	7	7	7	7	7	7	7		7	7	7		7							
EXPERIENCE	0-7	5	5	5	5	5	5	5		5	5	5		5							
ATTACHM'T	0-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A							

KHE SANH - Briefing

AXIS	ALLIED
SIDE [16]: North Vietnam	SIDE [16]: United States
CORPS [16]: NVA	CORPS [16]: 1st Air Cavalry
COMMANDER [16]: Giap	COMMANDER [16]: Tolson

DAY	NIGHT	SUPPORT	DAY	NIGHT
5	3	QUANTITY (0-99)	99	10
3	2	RELIABILITY (0-3)	3	1
8	5	RATING (0-15)	15	5

AIR SUPERIORITY (0-7)

STATUS = 7
RELIABILITY = 7

STRONG ALLIED
DEPENDABLE

SCENARIO [16]: Khe Sanh(All Out Assault)

BRIEFING [26]: Prelude to the Tet(The NVA Go For Broke) Offensive, 1-8th(10th) April 1968

(0-3)	START =	0	am
(1-31)	DATE =	1	1st April 1968
(1-12)	MONTH =	4	
(0-99)	YEAR =	68	
(0-20)	CENTURY =	19	
(1-16)	LENGTH =	8(10)	
(0-3)	WEATHER =	3	CLEAR
(0-7)	FORECAST =	7	CLEARING
(0-7)	CLIMATE =	2	TROPICAL
(0-31)	MECH MIN =	10	

BRITTLENESS			NIGHT CAPABLE		
(0-9)	AXIS =	00 %	(0-1)	AXIS =	1
(0-9)	ALLIED =	00 %	(0-1)	ALLIED =	0

KHE SANH - Terrain Effects Chart

TERRAIN CODE (T0-T15)	TERRAIN NAME [10]	TERRAIN COSTS PER HEX		ATTACK EFFECTS		
		MECH (0-31)	NON-MECH (0-31)	ARM (0-7)	ART (0-7)	INF (0-7)
T0						
T1	Open	2	1	7	7	7
T2	Hill	4	2	5	7	5
T3	Jungle	-	3	2	2	5
T4	LZ	1	1	7	7	7
T5	Village	2	1	5	7	5
T6	Khe Sanh CB	2	1	1	1	4
T7	-	-	-	-	-	-
T8	-	-	-	-	-	-
T9	-	-	-	-	-	-
T10	-	-	-	-	-	-
T11	-	-	-	-	-	-
T12	-	-	-	-	-	-
T13	-	-	-	-	-	-
T14	-	-	-	-	-	-
T15	-	-	-	-	-	-
-	ROAD	1	1	N.A.	N.A.	N.A.
-	FORT	N.A.	N.A.	3	1	3
-	CITY	N.A.	N.A.	-	-	-
-	BRIDGE	4	2	3	7	5
-	RIVER	N.A.	3	2	7	4

KHE SANH - Objectives & Miscellaneous Factors

I.D.	Name [11]	Map Loc [x,y]	Div. (0-3)	Def. (0-1)	Start (1-99)	End (1-99)	Pts/T (0-30)	Pts/E (0-255)
1(AX)	Khe Sanh 1	5,5	0	0	1	31(39)	10(5)	100(50)
2(AX)	Khe Sanh 2	6,5	0	0	1	31(39)	10(5)	100(50)
3(AX)	Khe Sanh 3	6,6	0	0	1	31(39)	10(5)	100(50)
4(AX)	Khe Sanh 4	7,5	0	0	1	31(39)	10(5)	100(50)
5(AX)	Lang Vei CB	1,10	0	0	15(25)	31(39)	2(1)	10(5)
6(AX)	Lang Vei Vil.	2,9	0	0	15(25)	31(39)	2(1)	10(5)
7(AX)	Khe Sanh Vil.	5,8	0	0	15(20)	31(39)	2(1)	10(5)
8(AX)	French Fort	7,9	0	0	15	31(39)	5(2)	25(10)
9(AX)	The Bridge	11,10	0	0	1	31(39)	5(3)	25
10(AX)	Outpost	15,7	0	0	1	31(39)	5	25
11(AX)								
12(AX)								
1(AL)	Khe Sanh 1	5,5	0	0	1	31(39)	1(2)	10
2(AL)	Khe Sanh 4	7,5	0	0	1	31(39)	1(2)	10
3(AL)	Khe Sanh Vil.	5,8	1	0	1	31(39)	3(10)	15(25)
4(AL)	Lang Vei CB	1,10	3	0	1	31(39)	5(10)	25
5(AL)	Lang Vei Vil.	2,9	3	0	1	31(39)	5(10)	15(25)
6(AL)	French Fort	7,9	1	0	1	15(39)	2(5)	15(25)
7(AL)	The Bridge	11,10	1	0	1	10(25)	2(5)	15(25)
8(AL)	Outpost	15,7	1	0	1	10	1(3)	10(15)
9(AL)	Hill 588	7,2	2	0	1	31(39)	5(10)	25(50)
10(AL)	Hill 861	4,3	2	0	1	31(39)	5(10)	25(50)
11(AL)	Hill 471	3,7	2	0	1	31(39)	5(10)	25(50)
12(AL)								

ADJACENT ENEMY HEX PENALTY (AXIS/ALLIED) (0-15)

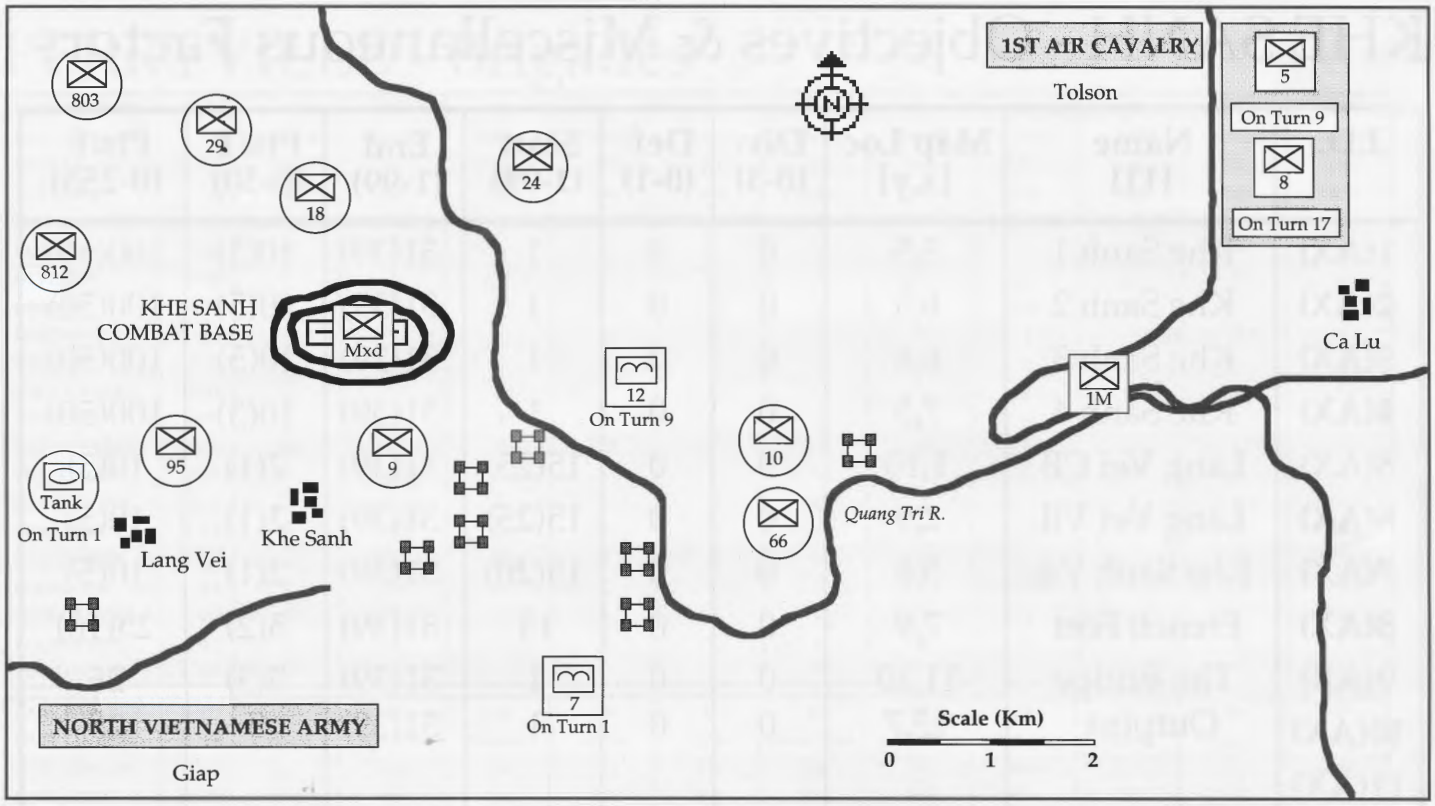
1st Hex =	0 / 1	4th Hex =	2 / 4
2nd Hex =	0 / 1	5th Hex =	2 / 4
3rd Hex =	1 / 2	6th Hex =	4 / 6

VICTORY POINTS PER STRENGTH POINT ELIM. (0-15)

	MECH	NON MECH
AXIS	5	1
ALLIED	5	3

MAP SIZE

ACROSS (0-2)	1
DOWN (0-3)	1



Situation Map for the All Out Assault Scenario

Issue 15 of *Run 5*, there is a detailed guide on WarPaint™ for Macintosh users.

IIGS and Amiga users should follow the instructions in their game manual. Most of the hints for Macintosh users are applicable to IIGS and Amiga users.

Preparing the Disk [3]. Boot up the Master Disk and select <CREATE> from Menu H. Select <SCENARIO> from Menu B. <LOAD> any historical scenario. You have been processed through to Menu J. Select the <DISK> line from that menu.

If you have one disk drive, remove the Master Disk and replace it with a blank disk. If you have two disk drives, remove the Scenario Disk from the second drive and replace it with a blank disk.

Select <FORMAT> from the on-screen menu. Once this is done, select <SAVE> from the menu and store the scenario in any unused save-game location. Select <CLEAR> from Menu J and erase both map and data. Save again in the same location. This procedure prepares the template on which we will build the Khe Sanh scenario.

The WarPlan™ menus are displayed on the back of the game menus card. Refer to this when necessary.

If possible, we recommend you prepare this scenario with any of the *Halls of Montezuma*, *Panzer Battles*, *Rommel* or *MacArthur's War* master disks. If you are using the earlier *Battlefront* or *Battles in Normandy* master disks then a few variables will have to be omitted. These are noted in the text. Note that these restrictions apply only to Apple II and C-64 users.

Corps Details [5.31]. Enter the data from the Briefing table.

Scenario Details [5.32]. Enter the data from the Briefing table. Ignore the Century, Climate, Brittleness and Night Capable variables when using the BF/BIN master disks.

Map Size [5.11]. Enter the data from the Map Size table.

Define Terrain [5.12]. Enter the data from the Terrain Effects Chart. If you are using a HOM/ROM/MW/PZ master disk on the AII or C64 or any IBM, Mac or IIGS master disk, you can use WarPaint™ to create the customised terrain icons of your choice.

Define Miscellaneous Factors [5.13]. Enter the relevant factors from the Miscellaneous Factors table and the appropriate part of the Terrain Effects Chart.

Create Map [5.14]. Use the accompanying map to build up the screen map. Do not forget to assign control to each hex as advised above.

Save the game again. How often you save really depends on how lucky you feel. After several major disasters, I choose to save after each section is completed.

Equipment Roster [5.22]. Enter the data from the Equipment table.

Troop Creation [5.21]. Enter the data from the OB charts into the appropriate locations. Note that there is a change to the US setup for the All Out Assault scenario, listed here due to lack of space on the OB. The airborne arrival hexes for the 12th Regiment of the 1st AirCav should be changed to 10,7, 11,7 and 11,6 for the 1st, 2nd and artillery battalions respectively

Equipment

0	
1	Leg
2	105mm How
3	122mm Roc
4	130mm How
5	Mortars
6	M48
7	Ontos
8	155mm How
9	Engineers
10	Motorized
11	Airborne
12	H'cptr G'ships
13	Pt76

Objectives [5.23]. Enter the data from the Objectives table. Note there has been an additional variable introduced into the Objective data base in *Rommel* (IBM), *Halls of Montezuma* (Mac, IIGS, Amiga) and *Panzer Battles* (all versions). Objectives which have a senior HQ assigned to them may be designated as defensive objectives. Only the specified senior HQ will be affected by this condition and it operates only while the objective is under friendly control. A junior HQ from the specified senior HQ will be despatched to the objective and will defend it as long as the time reference applies.

Note that the movement mechanics in the IBM/Macintosh/IIGS/Amiga versions are more efficient than those in the AII/C64 versions and this may slightly alter play balance.

Minor Combat Effects (IBM, Mac, IIGS, Amiga and *Panzer Battles* AII/C64) [5.33]. For the Khe Sanh scenario, the Fort Enhancement values are 12 (Axis) and 2 (Allied). The City Enhancement values are 0 (Axis) and 0 (Allied). The General Enhancement values are 5 (Axis) and 3 (Allied). For the All Out Assaul scenario, the Fort Enhancement values are 7 (Axis) and 4 (Allied) . The City Enhancement values are 0 (Axis) and 0 (Allied). The General Enhancement values are 3 (Axis) and 5 (Allied). AII/C64 and Mac users may wish to experiment with play balance by altering the general enhancement values. Note that C64 users will need the *Panzer Battles* master disk or the complimentary *Battlefront System* master disk given out to C64 disk subscribers with Issue 14.

Finally, save again and the scenario is ready to play.

NOTES FOR IBM USERS

IBM users with CGA, MCGA, Tandy or Hercules graphics, or using the first edition of *Halls of Montezuma*, can create the scenario using the advice given above.

IBM users with EGA or VGA cards and the *Rommel* (or subsequent) master disk have access to our "full-map" graphic routines. When creating the map or the unit icons, you must first disable the "full-map" graphics. To do this, run the program as rom f which will bypass the "full-map" graphics. Select a scenario as a template as explained above and save it in a save-game location. Build up the map in the usual way and save when finished. The rest of the data for the scenario may be entered with the "full-map" graphics either disabled or enabled.

Re-boot the program (this time with the "full-map" graphics enabled) and use the "full-map" *WarPaint*™ tool to build up the map. In other words, the "full-map" graphics are only graphic images and do not affect the play of the game.

For a detailed description of the procedure, read the article in Issue 14.

A NOTE ON .LBM FILES

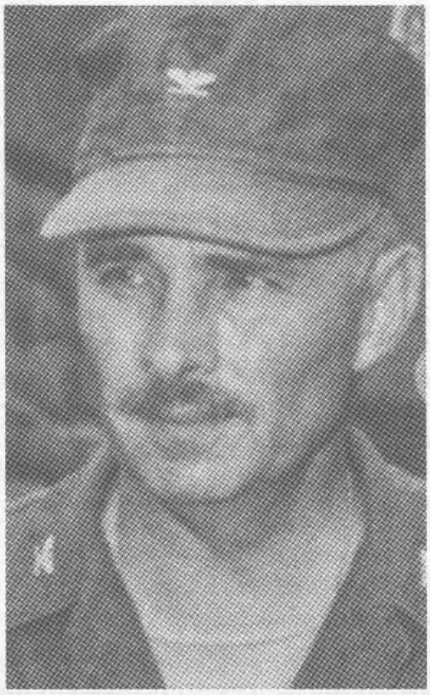
The .lbm files contain the graphic images. DPaint2™ from Electronic Arts can be used to manipulate the file. Up to 250 hexes can be created but DPaint2™ must be used to change the size of the .lbm file. To do this, use the 'Page Size' function to alter the height of the file.

The *Battlefront System* program reads the size of the .lbm file on loading and adjusts the *WarPaint*™ values automatically. If you don't want to worry about manipulating .lbm files, choose a scenario with a 250-hex .lbm file as the template to build the new scenario on.

When saving an .lbm file, a temporary file is created first. When the temporary file is successfully saved the original is deleted and the temporary file renamed. This means there must be enough space on the current disk to hold the temporary file.

A NOTE ON THE GAME SYSTEM

In contrast to most board games, movement allowances are expended after a unit has moved into a hex; i.e. provided at least 1 MP remains, a unit will always move one hex. Only the *Battlefront Game System* handles movement



Col. David Lownds
The commander of Khe Sanh Combat Base throughout the siege.

this way. Our other games all require a unit to have the full cost of moving into a hex available before they can move into it.

PLAYER'S NOTES

HISTORICAL SCENARIO

North Vietnam

You must make the choice between committing the bulk of your men to the battle on the highway or to assaulting Khe Sanh. The former gives you a better chance of winning, while the latter will assure you of either a big win or an equally big loss. Whichever choice you make, stick to it. If you are fighting on the highway you should make the US pay for every yard of ground. Use the forts to slow up his advance and counterattack weak units at night or during bad weather. If you attack Khe Sanh you need as many units as possible to maximise the effects of minor combat. Only attack at night or if you become desperate to break into the base. If you take any hexes of Khe Sanh, hold onto them like grim death.

U.S.A.

Your strategy depends to a certain extent on what the NVA decide to do. If they attack Khe Sanh in force you must use your support points defensively to keep them out. Push up the highway as quickly as possible, concentrating on selected attacks with massive air support. If the Nva oppose you on the highway, the Khe Sanh garrison can launch useful attacks. Once contact has been made with the garrison, push on and take all the objectives. By the end of the game you should have succeeded in destroying most of the enemy units.

ALL OUT ASSAULT

North Vietnam

Unlike the historical scenario you have enough troops to take the Americans on in a stand-up fight. One division should be enough to hold up the US advance along Highway 9 while the other two divisions pitch into Khe Sanh. If you can wipe out the Garrison you have enough men to make the US advance impossible. Use your increased mobility in the jungle to cut the highway in the US rear. If the US have to send back troops to reclear a section of highway you can take the opportunity to attack the nose of their column. Clever play should see the US player forced back almost to his start line by the end of the game.

U.S.A.

You are heavily outnumbered in this scenario, but luckily the more aggressive NVA stance makes them sitting ducks for air strikes. This has been figured into your improved minor combat odds. With judicious use of support points, Khe Sanh should be able to hold out indefinitely. Husband your resources on the highway, you shouldn't make too many attacks each turn, just make sure the ones you do make are effective. Use your airborne battalions to stop any NVA infiltrators through the jungle. Failure to protect your supply lines will result in defeat. Once you are past the last line of forts you are into the big victory point objectives. Enjoy!◆

LETTERS
Continued from p. 4

Gentlemen,

This is just another boring letter in praise of the really tremendous computer war games you publish-just like hundreds of other letters you get every day (Yeah, but tell us one more time anyway-Ed.). I purchased every game you made for the apple except for the fantasy and science fiction releases and will probably purchase everything you turn out for the IBM.

I have already upgraded all three volumes of DBACW and MW to IBM format since purchasing that system. For a brief time I had an Amiga, and I upgraded a couple of your games to that format, so you can see how much I like them. I still think that CAW is the best game you ever did, followed closely by Europe Ablaze, and I am awaiting with some impatience the long-delayed release of the new and improved IBM version of the former. However, being an ex-infantryman and a re-enactor, I prefer playing your Civil War games and the Battlefront system more than Carriers and EA.

In fact I enjoy the Civil War series so much that I have tried my hand at designing a few scenarios myself. So far I have only endeavoured to convert games in SPI's old Great Battles of the American Civil War series into scenarios (which appears to be the approach you have been following also since, with the single exception of South Mountain, all the Civil War scenarios you've done have covered the same battles as games in that old SPI series) (Gee Robert, that's a bit harsh, how many companies have produced a series of games on Civil War battles and not included Shiloh, Antietam and Gettysburg-Ed.). Now that I have an IBM machine, I am entering the data for all the past magazine games and for the scenarios I created earlier for the Apple. Afterwards I hope to design some new scenarios, perhaps including some battles from the Russo-Turkish War of 1877-8.

This calls to mind a suggestion for an article in Run 5: Why not do a piece on nineteenth century weapons systems, similar to the statistical profiles you've done on WWII ships and aircraft for CAW and EA. If I were to attempt to design a scenario covering any European or Latin American nineteenth century conflicts, I would be very uncertain of how to rate the various small arms and artillery weapons in use by the various countries at that time. Of course, I could compare real-life statistics of Civil War weapons with those of European weapons and with the figures in the game system, but since you

Continued on p. 38

"You Take the Paint-Pot, I'll Take the Brush..."

Painting Ships for Carriers at War

by Ian Trout

In the last two years I've painted about 200 ships for use with Carriers at War. That's 150 which appeared in the game and another 50 or so of my initial efforts that were scrapped for failing to meet 'Admiralty' requirements.

Since I have no artistic talent whatsoever, merely some little ability to copy in a 'monkey see, monkey do' fashion, I am in an ideal position to coach the prospective ship painter through the process that will hopefully lead to the creation of a new warship graphic, ready for inclusion in a scenario database.

First off you will need a good reference source; preferably one with line drawings. At the end of this article there is a bibliography of the various source materials I have found useful.

You need a paint program that will allow you to create a graphic in an .lbm file format or, if you are using a paint program that makes .pcx files rather than .lbm files, you will need a program that converts .pcx files into .lbm files, and vice versa. There are several shareware programs which will do this. The paint program I use is Deluxe Paint II Enhanced™.

Finally, I am assuming that you have some experience with the paint program you're using and you have worked through the Construction Kit tutorials for building up ship graphics.

Now onto the painting. The example used here is the Revenge class British battleship. There's no need to re-invent the wheel so the first thing to do is look through existing vessel graphics and see if we can find one with a similar hull shape, and as much else similar as possible.

The Japanese Nagato class battleship has a similar hull shape and the same arrangement for its secondary battery.

Step 1. Produce an .lbm File for Nagato Class Battleships

From the CAW directory (or the CREATE directory), type cp to bring up the paint and pack routines. From the Template menu, select Make Vessel. The Construction Kit manual tells you that the graphic file for a Nagato class battleship is 125jpbb. Use the arrow buttons to page through the .pck files (and don't confuse .pck with .pcx) until you find 125jpbb, click on it and then on the Build # button.

Important Note

There is a small bug in V. 2.00 of the Construction Kit. The Pack routines won't work unless the CAW directory is the root directory.

You won't see anything happen, but an .lbm file has been produced. Convert this .lbm file to a .pcx file if that's what your paint program requires. Deluxe Paint II™ uses .lbm files directly.

Step 2. Paste the Nagato onto the Ship Paintboard

The Issue 19 scenario disk (IBM only) contains a file called paintbd.lbm. This is the Ship Paintboard I use. It contains all sorts of useful bits and pieces ranging through gun turrets, funnels, direction finders, torpedo tubes, cranes, planes, trains (well... maybe not) and other assorted naval equipment. Copy

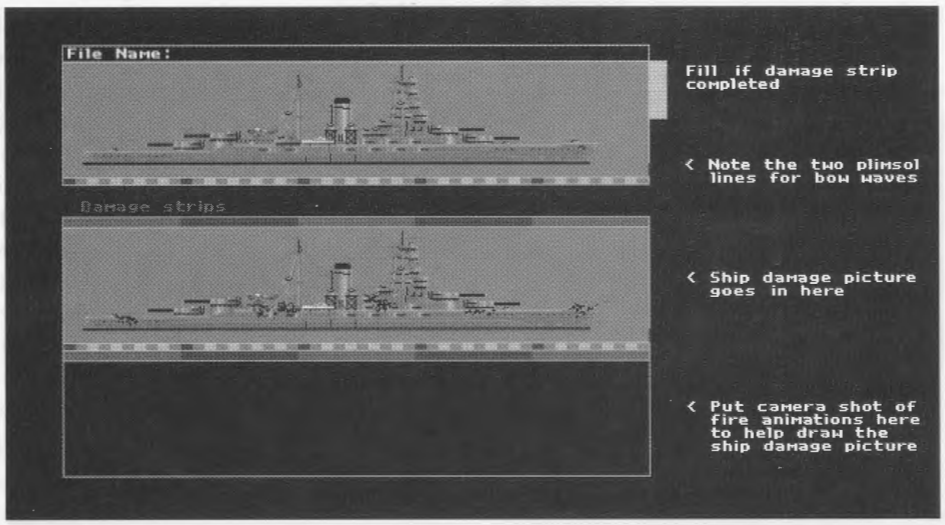

File Name:
Fill if damage strip completed
< Note the two plimsol lines for bow waves
Damage strips
< Ship damage picture goes in here
< Put camera shot of fire animations here to help draw the ship damage picture

Fig 1. *The 125jpbb.lbm file as created by the Make Vessel command in the Paint and Pack routines*

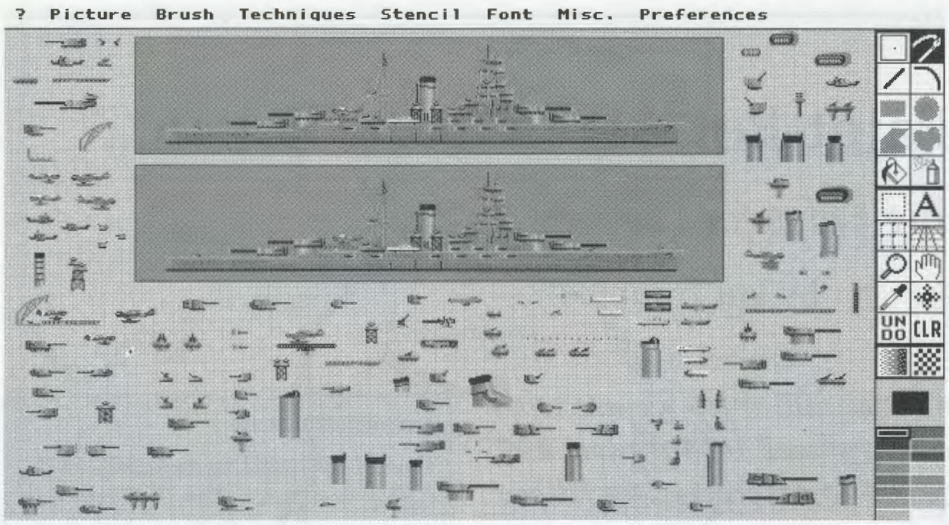


Fig 2. The Ship Paintboard is ready for use. The Nagato has been pasted into both boxes and the file saved as revenge.lbm

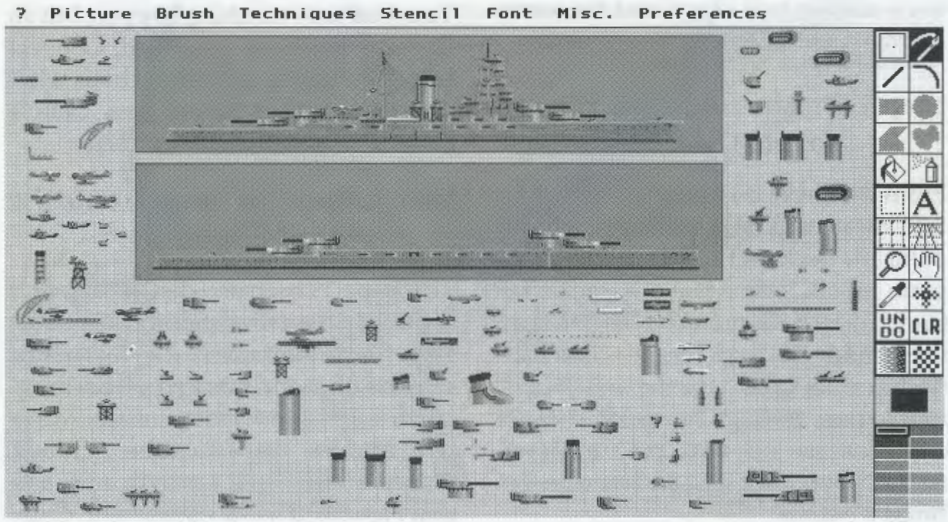


Fig 3. Painting in progress. The hull has been lengthened, a bit of work done on the main gun turrets, and the secondary battery shifted

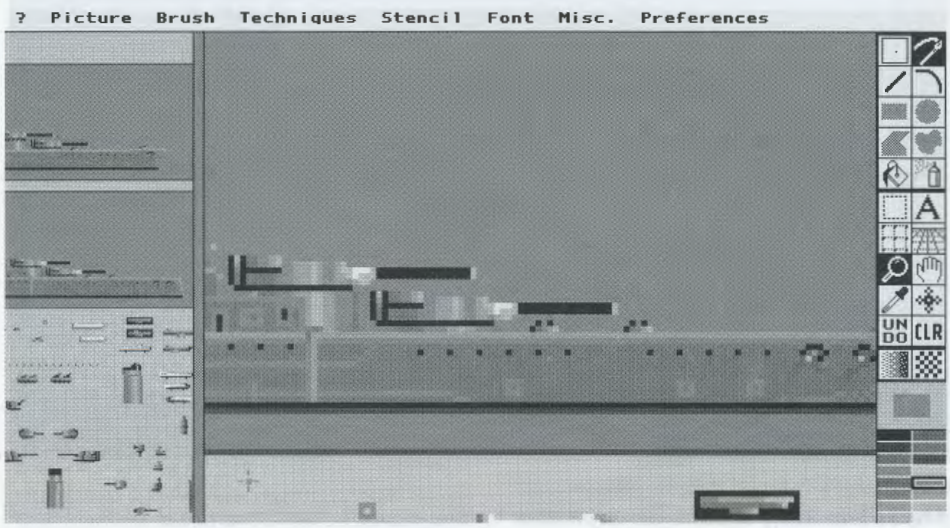


Fig 4. Painting in progress. A screen magnification showing details of the main gun turrets

this file into a convenient location on your hard drive (and convert it to a .pcx file if necessary).

If you don't have a disk subscription, call our US or Australian office and we'll send you the disk for five bucks. Failing that, the 125jpbb.lbm file itself can serve as a Ship Paintboard; just rename it paintbd.lbm or similar.

Okay. Open your paint program and load in in the 125jpbb.lbm file. It should look like *fig 1*. If the palette is incorrect, you must first load in a file with a correct palette, then load the 125jpbb.lbm file and select Restore Palette from your paint program's menus. Cut out the top ship (the one without any damage). Don't take any background with it.

Important Note

Do not alter alter the size or location of the ship boxes. They must be in exactly this location on the screen for the pack routines to work properly. If you move the boxes around, you will get a really weird ship graphic appearing in your scenario!

Now load in the paintbd.lbm file and paste the ship into both blue boxes as shown in *fig 2*. Save the file as revenge.lbm. This is the file you will be working with until you've finished painting the warship.

Step 3. Painting the Revenge

I guess this is the hardest part of the article to provide help. *Figs 3, 4 and 5* show the Revenge at various stages and on completion. I kept the top ship as a source for bits of super-structure, etc and converted the bottom copy of the ship into the Revenge. Save again when you've finished.

Step 4. Preparing the Revenge for Packing

Cut out the completed Revenge from the revenge.lbm file. Don't take any background with it. Go to the SHIPS sub-directory in the CAW directory

and open the template.lbm file from your painting program. *Fig 6* illustrates what you will see.

Immediately copy the template.lbm file as 221brbb.lbm. The reason for this is to preserve the template.lbm file in its original condition because this is the file the Make Vessel command uses create .lbm files from .pck files and if you corrupt it, you will find it difficult to make future use of the Make Vessel command.

Why 221brbb.lbm? That's the code I've chosen for the Revenge class battleship. A full listing of British warships appears in the Construction Kit supplement you will find in *Carriers at War II (Fleet Carrier Operations in Southeast Asia 1936-1946)*.

Use the fill command from your paint program to paint a blue background into each of the three ship boxes. Use the text tool to type 221brbb into the small rectangle above the top ship box. *Fig 7* shows what your screen should look like at this point. Save again (as 221brbb.lbm).

Now paste the Revenge into the top ship box. The black waterline on the ship must be at the same height as the upper indicator on the red 'plimsoll' line mark on the side of the ship box, as illustrated in *fig 8*. (Note that either the upper or lower indicator can be used; they correspond to the two bow wave heights you can choose in the Build Graphics routines of the Construction Kit.

Once this is done, paste the Revenge into the middle ship box, making sure it is in exactly the same position relative to the ship box as the first paste. The grey check pattern in the upper ship box greatly facilitates this placement. Your screen should look like *fig 9*. Save again.

The Revenge is ready for packing.

Step 5. Packing the Revenge

Quit your paint program and type cp from either the CAW or CREATE directory to bring up the Paint and Pack routines again. Select Vessels from the Picts menu. Click on the 221brbb file in

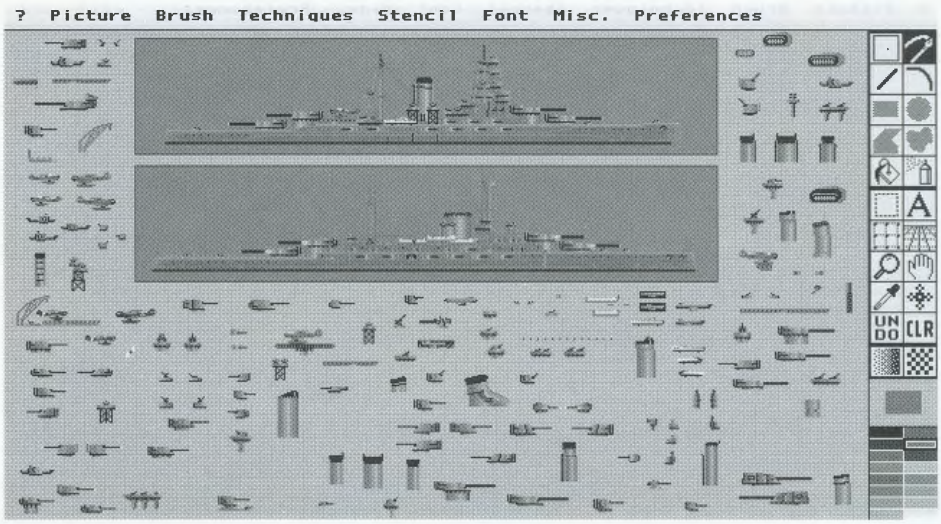


Fig 5. *Painting completed. HMS Revenge is ready to sail*

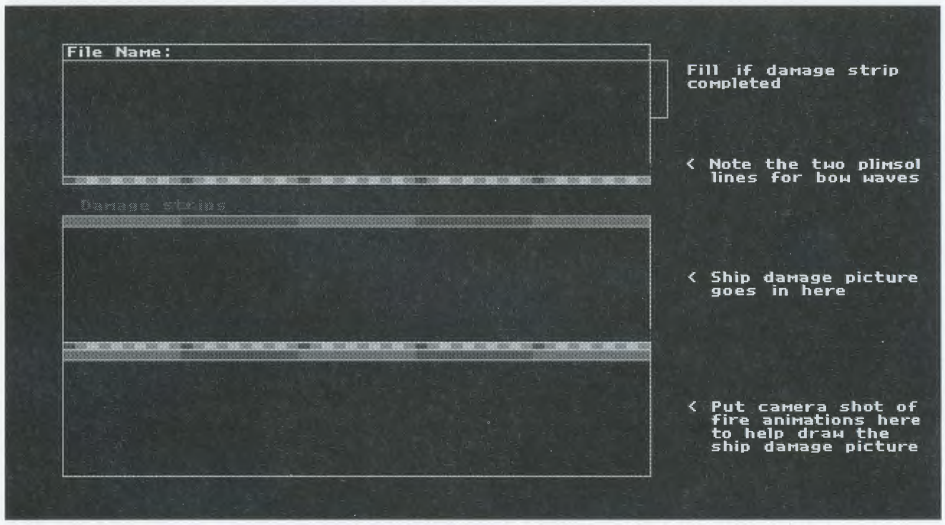

File Name:
Fill if damage strip completed
< Note the two plimsol lines for bow waves
Damage strips
< Ship damage picture goes in here
< Put camera shot of fire animations here to help draw the ship damage picture

Fig 6. *The template.lbm file*

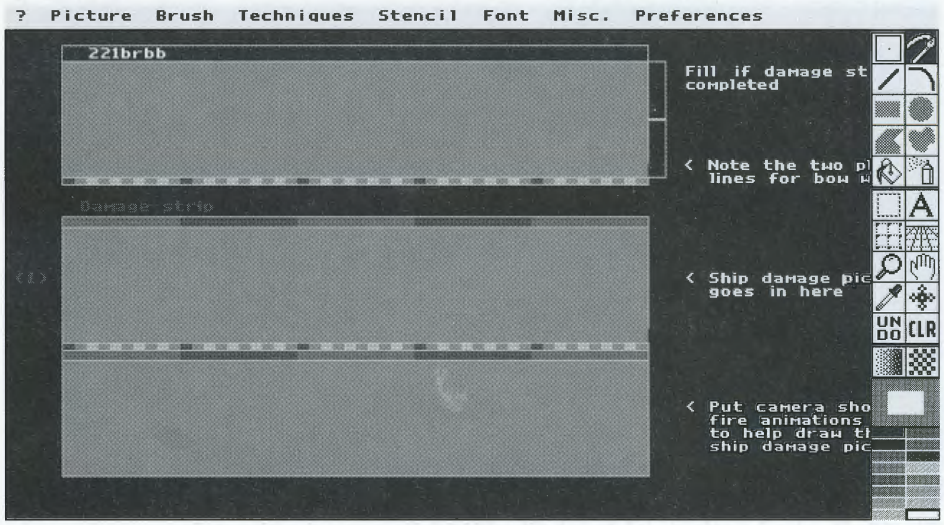

? Picture Brush Techniques Stencil Font Misc. Preferences
221brbb
Fill if damage st completed
< Note the two pl lines for bow w
Damage strip
< Ship damage pic goes in here
< Put camera sho fire animations to help draw th ship damage pic
UN DO
CLR

Fig 7. *The 221brbb.lbm ready for use. Paste the Revenge into the top and middle boxes as described in the accompanying text*

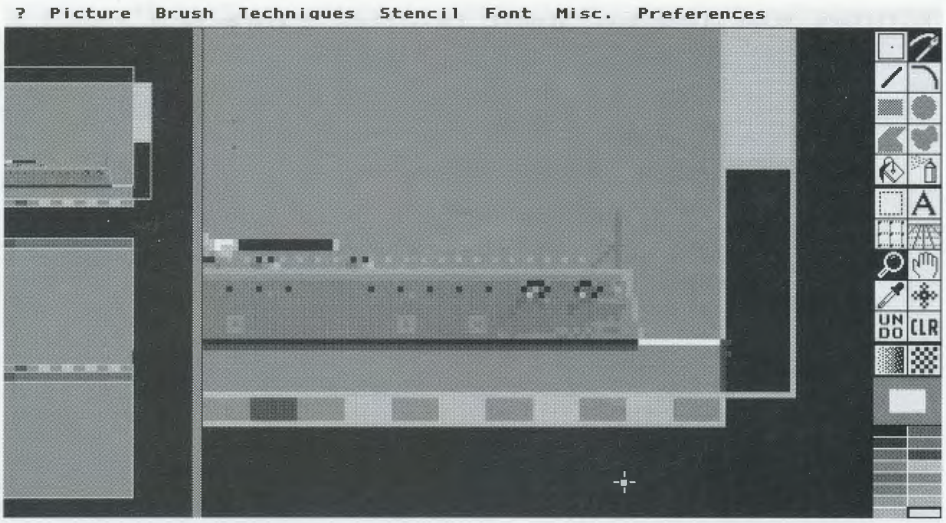


Fig 8. Aligning the Revenge's waterline with the 'Plimsoll' line at the side of the top ship box

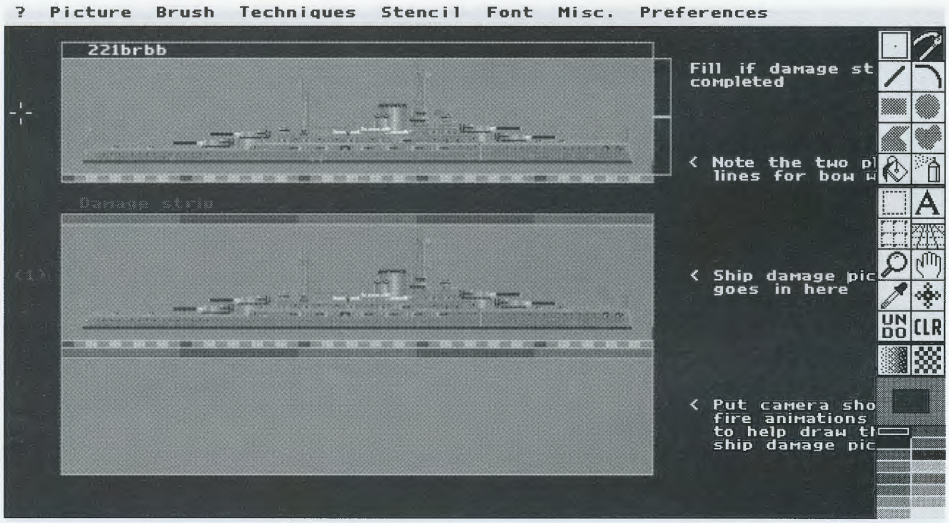


Fig 9. The 221brbb.lbm file is ready for packing

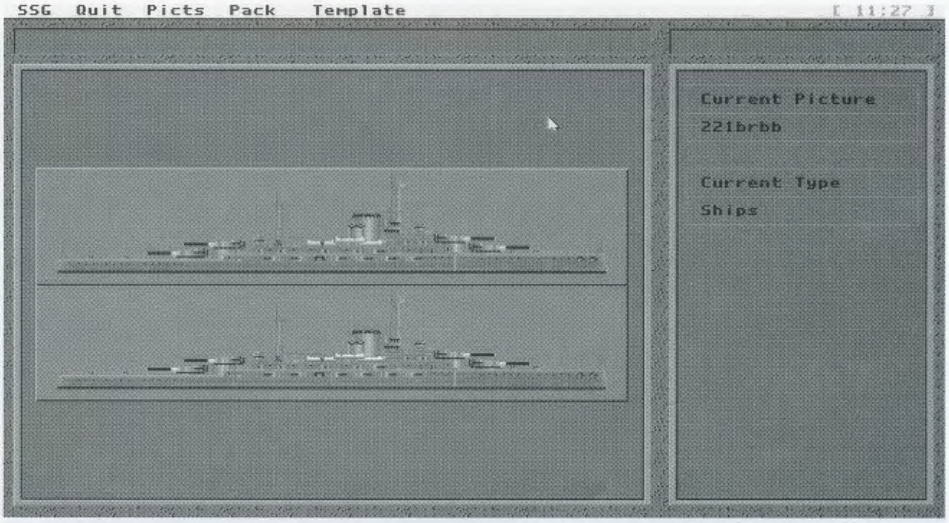


Fig 10. Producing the initial .pck file. HMS Revenge (without damage) is ready to be animated

the file window and then click on the Pack # button.

A .pck file for the Revenge will be built up. *Fig 10* shows what it will look like. There is no need to save this .pck file. That happens automatically.

Step 6. Animating the Revenge

This is the part you should already know how to do. You've had plenty of practice in the Construction Kit tutorials.

I'm using the Revenge in the Trincomalee (what a wonderful sounding word!) scenario which will appear in *Carriers at War II*. If you don't have this superb sequel yet, and lose two brownie points if that's the case, rush out and buy it now! Or pretend one of the old US battleships at Pearl Harbor is a Revenge class warship and use that instead. Just remember not to save!

Before loading the Construction Kit, you must go to your paint program and turn on its camera function. The reason for this is that we are going to take a screen shot of the Revenge with all its fires lit to help us paint in the damage in the right place. It's not much use if the fires spring up 20 pixels away from the damaged section!

From the CAW or CREATE directory, type create to load the Construction Kit. Select the Trincomalee (Pearl Harbor) scenario and then select Build Vessel from the Graphics menu. Use the List Vessel menu item to locate HMS Resolution (or an old US BB).

Type 221brbb in the Vessel File Name field. *Fig 11* shows what you will see. Save.

Click on the Animate button. Type (4), (1), (6) into the Bow Wave field. You can fiddle around with these numbers if you wish; other combinations may well work also.

Type (6), (9), (10), (29), (13) into the Strip Fire field. Type (13), (12), (13), (2), (12) into the Strip Explosion field. Again, other combinations will also work. Save.

Click on the All button of the Fire section in the right hand window. Fires spring up everywhere. Click on the All button of the Explosions section to confirm that the explosions are occurring in the right place.

With the bow wave going and all fires on, the screen should look like *fig 12*. If so, move the mouse away from the ship itself and activate the camera function of your paint program (Alt C in DeLuxe Paint II Enhanced™). Save again then quit the Construction Kit.

Step 7. Painting Damage

Load your paint program and locate the camera shot of the blazing Revenge. You will find this camera shot in the CREATE directory. Restore the palette if necessary. Cut out the Revenge without any background. Load in the 221brbb.lbm file in the SHIPS sub-directory and paste the blazing revenge into the bottom ship box. Precise alignment is not important here. Save (as 221brbb).

Also provided on the Issue 19 scenario disk is a file called shipdam.lbm. This file contains all sorts of useful damaged sections. Copy it into a convenient location on your hard disk. Load the shipdam. file and cut out the area described by the blue rectangle. Paste onto the right hand side of the 221brbb.lbm file as shown in *fig 13*. Save (as 221brbb).

Important Note

As soon as all damage has been painted on you must select a color (any color except black will do) and fill in the small rectangle attached to the upper right side of the top ship box. See *fig 14* again.

This tells the pack routines that the damaged vessel graphic has been painted as well as the undamaged vessel graphic so that both graphics will be packed for use in the scenario.

Fig 11. The Build Vessel screen with the Vessel File Name entered

Fig 12. The Build Vessel screen with the Bow Wave, Strip Fire and Strip Explosion fields entered and fire animations turned on

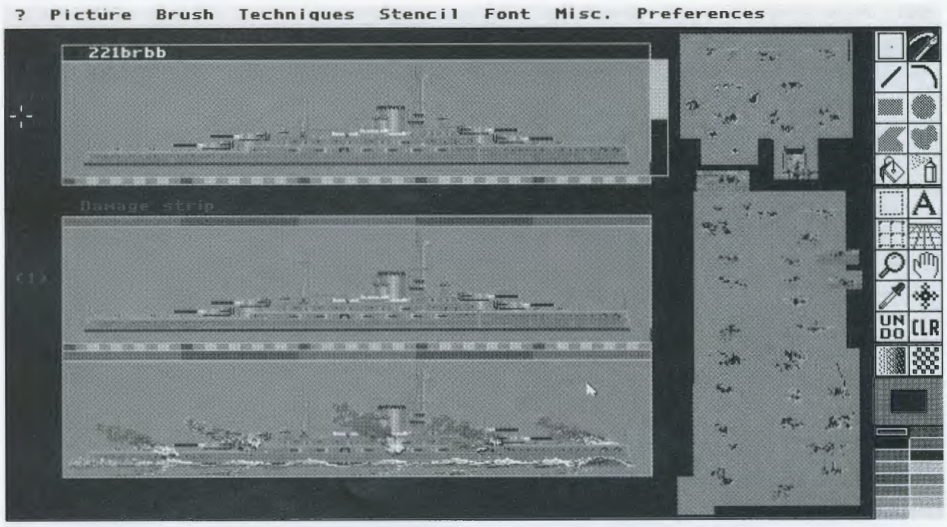


Fig 13. The 221brbb.lbm file with the camera shot of the blazing Revenge pasted onto the bottom ship box

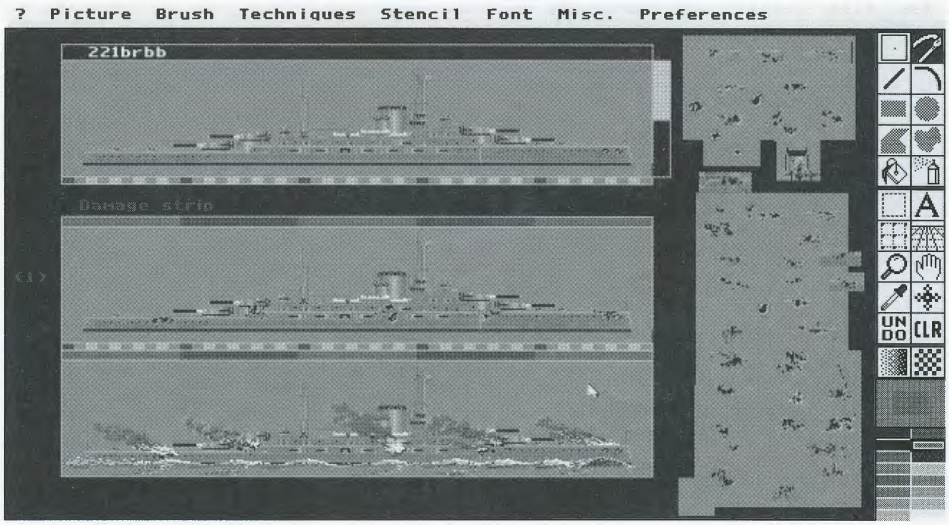


Fig 14. The 221brbb.lbm file with all five damage sections (centre ship box) painted to correspond with the fires

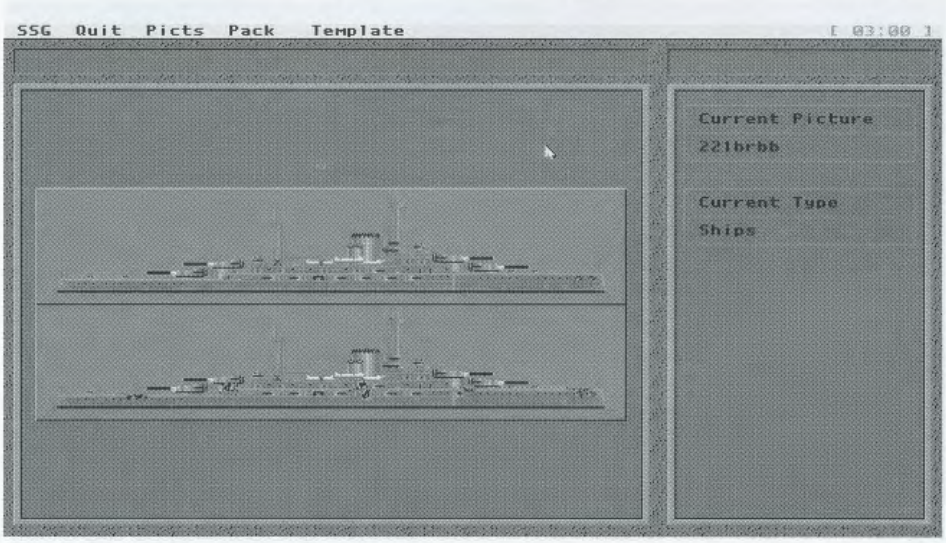


Fig 15. The .pck file for the Revenge Class battleship in its final form

Fig 16. The completed Build Vessel screen for HMS Resolution, a Revenge class battleship

There are five damaged sections to paint, each corresponding to a fire. Again, words aren't much help when it comes to artistic creation so do the best you can to paint in the damage. Use *fig 14* as a guide. Remember, it is important to put the damage at the source of the fire. Save again.

Step 8. Packing the Revenge (Again)

This time we are packing the Revenge for the final time! Type cp from either the CAW or CREATE directory to bring up the Paint and Pack routines again. Select Vessels from the Picts menu. Click on the 221brbb file and then on the Pack # button.

A new .pck file for the Revenge will be built up. *Fig 15* shows what it will look like. There is no need to save this .pck file. That happens automatically.

Step 9. Finishing Off

Load up the Construction Kit again, select the Trincomalee scenario and then Build Vessel. Bring up HMS Resolution. Click on the All button of the Damage section of the right hand window. A battered battleship will replace the pristine model.

Finally, consult the Construction Kit supplement in the *Carriers at War II* manual for the Historical and Ship Class briefings for the Resolution. Look at *fig 16*. That's what it's all about. Another warship ready to do battle... not that the poor old Resolution can much against the five Japanese flat-tops it is about to encounter.

USING PAINT PROGRAMS OTHER THAN DELUXE PAINT II ENHANCED™

Your paint program may be able to read the .LBM files produced by the Construction Kit. The file format is also called .IFF, so examine the Load and Save options in your paint program.

Continued on p. 46

The Battle of Perryville

Buell's Missed Opportunity

October 8th, 1862

A Scenario for the Decisive Battles Game System

by Stephen Hand

In the summer of 1862 the Confederacy carried the war to the Union. In the east Robert E. Lee launched his first invasion of Maryland which culminated in the bloody battle of Antietam. In the west Bragg marched north into Kentucky. In a campaign where both commanding generals were criticised for their lack of resolve, there was one major battle. At Perryville 16 000 Southerners were brought to bay by 55 000 Yankees. And yet the South took the tactical offensive, defeating the Union forces and managing to retire in good order. How could this strategic Union triumph have been converted into so abject a tactical failure?

On the 27th of June 1862 Braxton Bragg replaced P.G.T. Beauregard as commander of what was to be called the Confederate Army of The Mississippi. Bragg was a capable, if irritable General. He had a reputation for making enemies, at one time including himself.

As a Lieutenant, while acting as both a company commander and as quartermaster Bragg had written to himself requesting supplies. As quartermaster he then wrote back denying the request. Again as company commander he requested the supplies, this time giving additional reasons as to why the request was valid, only to be denied again by himself as quartermaster. At this point Bragg referred the matter to his commanding officer who after reading the letters exclaimed in disbelief "My God, Mr Bragg, you have quarrelled with every officer in the army and now you are quarrelling with yourself".

After Shiloh in early April U.S. Grant's army had quickly pushed forward to Corinth, the Confederate forces retreating to Tupelo. It was clear to most observers that the next Union thrust in the west was to be with Don Carlos Buell's army against Chattanooga, control of which point would allow the Union to contemplate an invasion of Georgia.

Bragg had only 45 000 men with which to oppose the forces of Grant and Buell. By mid-July he was faced with four choices. Firstly he could remain passively in Tupelo, awaiting the next move from Grant or Buell. Secondly he could attack Grant. Thirdly he could advance into middle Tennessee, splitting the two Union armies and finally he could advance into eastern Tennessee drawing Buell after him.

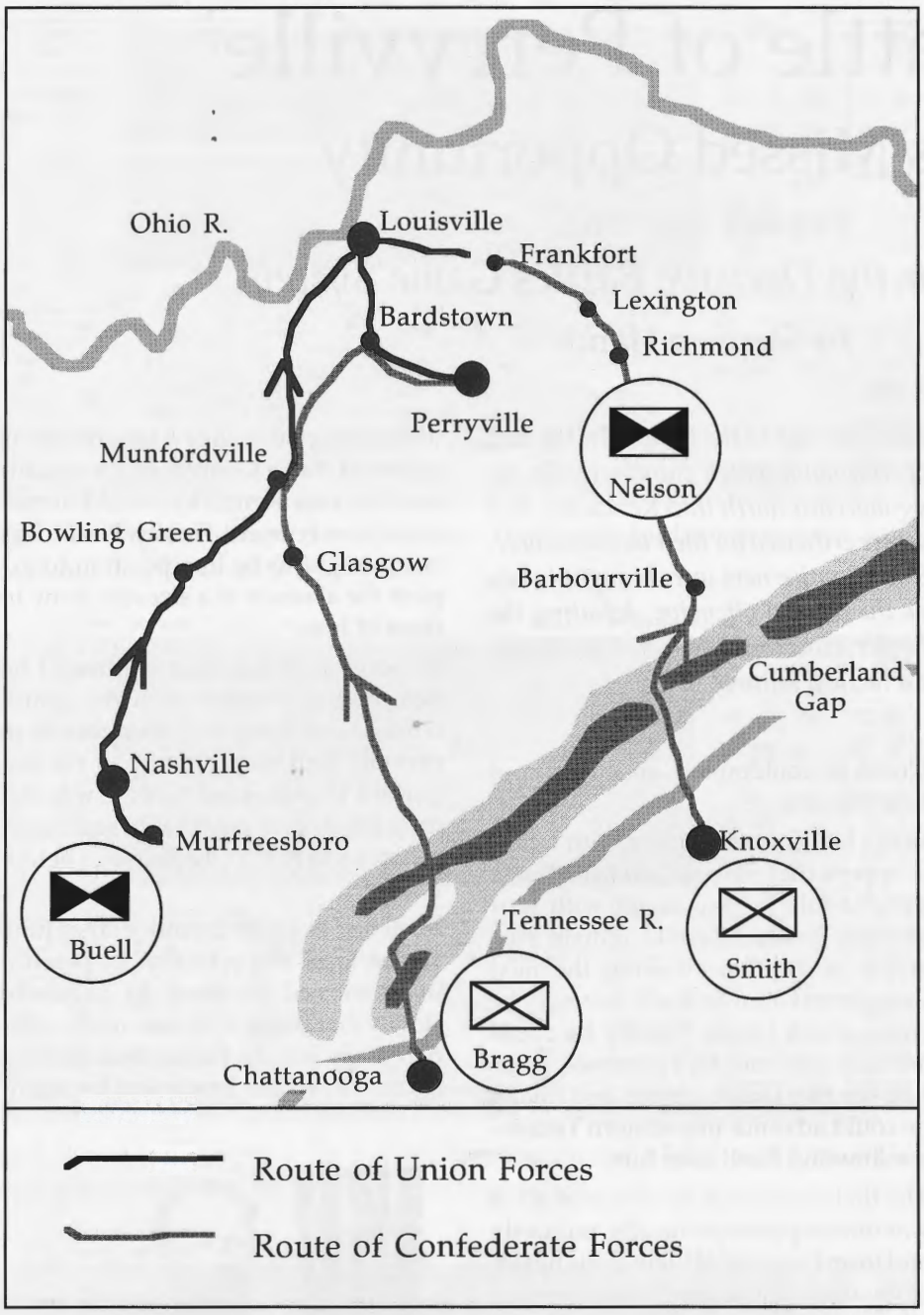
The first choice was no choice at all. It was unacceptable politically, militarily and from the point of view of the health of the army. The second would be playing into the hands of the Union by allowing Buell to conduct a campaign in Georgia or Alabama unmolested while Grant fought a defensive battle in west Tennessee. The third choice was deemed unacceptable due to the possibility of the two Union armies coordinating to destroy the Confederates.

This left the final choice, the invasion of eastern Tennessee and Kentucky. This plan had several advantages. Firstly it would allow Bragg to coordinate with the forces of Kirby Smith already in the area. It would also prevent Buell from threatening Georgia or Alabama. It was expected that a Confederate army advancing into Kentucky would attract numerous recruits. Finally, Grant was not thought to be in a position to exploit the absence of a sizeable army in front of him.

As soon as Bragg took command he detached a division to Kirby Smith whose small force had been unable to prevent the Union capture of the important Cumberland Gap. It was not until the 21st of July that Bragg began his move to reach Chattanooga before Buell.

Buell had been on the move since June 9th, at least theoretically. In practice Buell moved his men so painfully slowly that Bragg's job was made comparatively simple. Rather than moving his men overland Bragg sent his infan-

Don Carlos Buell
The unfortunate Union Commander



Campaign Map for Perryville

try by rail. Despite the fact that the rail journey was via Mobile on the Gulf coast and hence hundreds of miles longer than the overland route, it was undergone in a fraction of the time.

Bragg easily beat Buell to Chattanooga and together with Kirby Smith planned the invasion of Kentucky.

On the 14th of August, Kirby Smith set out from Knoxville leaving 9000 men to cover the Union force in Cumberland Gap. It was thought that Buell would be compelled to cover Bragg's army in Chattanooga giving Kirby Smith time to advance deep into Kentucky and start recruiting before Bragg commenced his advance.

After a pause at Barbourville Kentucky, Kirby Smith advanced to Richmond where, on August 30th, his 12 000 men were opposed by approximately 7000 raw recruits under Nelson. Nelson was not on the field at the start of the battle and had he been, he probably would have retired. As it was the brigade commanders on the spot chose to fight and were routed by the first solid attack.

Nelson rallied his fleeing men and formed a new battle line. This line was attacked frontally and in the flank. In the words of General Nelson "Our troops stood about three rounds". The second rout was complete and the Confederates inflicted about 1000 casualties and took over 4000 prisoners for a cost to themselves of less than 500.

Two days before the battle of Richmond Bragg had left Chattanooga with 28 000 men. Buell believed that Bragg would attempt to take Nashville and consequently ordered his scattered corps to concentrate on Murfreesboro before retiring on Nashville. Leaving Thomas with three divisions in that city Buell left it on September 7th, marching north for Louisville.

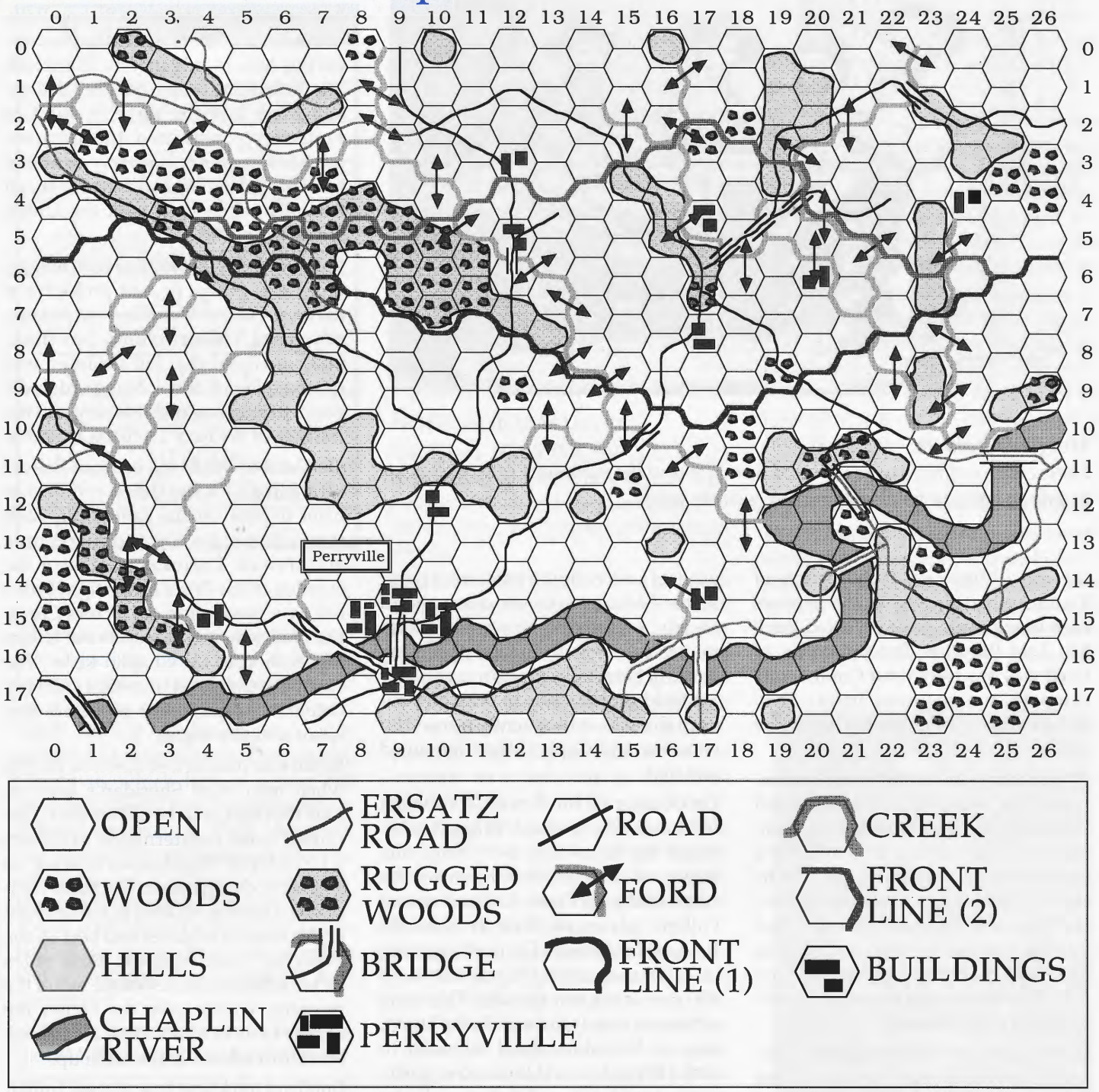
Buell reached Bowling Green on September 14th to find that Bragg was east of him at Glasgow. Thomas and two divisions were promptly recalled on the grounds that "If Bragg's army is defeated Nashville is safe; if not, it is lost".

While Buell was waiting for these troops to come up Bragg took the opportunity to attack a Union fort at Munfordville. The first assault, by a single brigade was heavily repulsed but when the remainder of Bragg's army came up the fort's commander Colonel Wilder surrendered with over 4000 men.

This incident gave Buell time to gather his forces and resume his march on Louisville. On the 17th of September he came up to find Bragg's army entrenched across his path. For three days the two armies stood facing each other until Bragg retreated north on the 20th. At the start of the campaign he had said that he would win "by rapid movement and vigorous blows". Now, after refusing battle he amended his statement saying "This campaign must be won by marching, not fighting".

As Bragg marched towards Louisville, Nelson was trying to knock a large, but entirely green, command into shape.

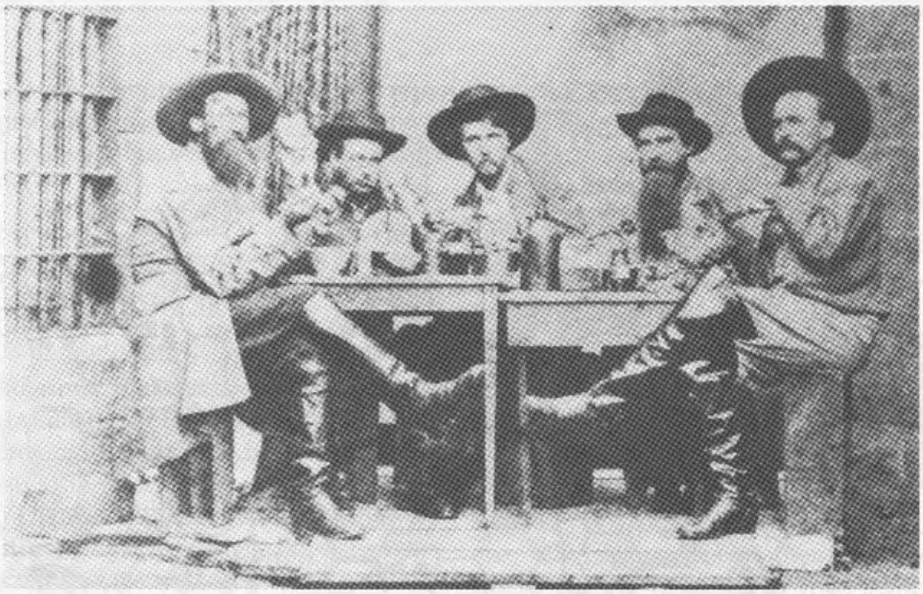
PERRYVILLE - Map



Buell could not beat Bragg to Louisville and it was entirely possible that the Confederates could have scattered a second force under Nelson before Buell had time to come up. This course of action represented a risk, however, and rather than risk being caught between two forces, Bragg moved east to Bardstown. On September 24th the first of Buell's divisions reached Louisville.

Meanwhile Kirby Smith had reached Lexington where his force began recruiting. This turned out to be far less successful than had been expected. Of more benefit to Kirby Smith's strength was the retreat from Cumberland Gap of General Morgan. Although successful, this freed up the division that had been observing the Gap.

As September dragged on it became clear that the Confederates could only remain where they were under sufferance from the Union forces. The planned conquest of Kentucky had



Morgan's Raiders
These cavalry officers were captured during one of the numerous raids that made supply so difficult for the Union forces in the west

become a huge raid. If the people of Kentucky had flocked to the banners then Bragg could have defeated Buell and held the state. But the defeat of Buell was precisely what Confederate sympathisers required before they would risk siding openly with the south.

By retreating 250 miles Buell had incurred the wrath of both Lincoln and General Halleck in Washington. Consequently they sent a wire informing Buell that he was relieved and that he should stand down in favour of General Thomas. Thomas requested that Buell be retained in command until he had had a chance to attack Bragg. Lincoln duly suspended the order replacing Buell with Thomas.

On the same day that the supersession order arrived, Nelson was shot as the result of an argument with the unfortunately named Brigadier Jefferson Davis. This deprived Buell of probably his top corps commander (not counting Thomas) and necessitated the appointment of the curious and incompetent Maj. Gen. Gilbert. Gilbert, a regular army captain, had been appointed Brevet Major General by the military governor of Louisville in a moment of panic before Nelson took over command of the city. Accordingly he was given command of a corps during the upcoming battle of Perryville. Lincoln eventually ratified his promotion to Brigadier but even this was subsequently refused by congress and Capt. Gilbert remained just that.

On October 1st Buell, with 77 000 men left Louisville to attack Bragg. He divided his forces into two wings, the larger, consisting of 55 000 men in three corps under McCook, Crittendon and Gilbert advanced directly towards Bragg at Bardstown. The northern wing of 22 000 men under Sill was a feint, 15 000 men being raw recruits. This wing advanced slowly towards Kirby Smith, now at Frankfort. Buell intended to strike Bragg first and then move north, uniting with Sill and defeating Kirby Smith in turn.

Bragg was with Kirby Smith in Frankfort on October 4th, attending the inauguration of the Confederate Governor of Kentucky. The ceremony was cut short by long range shelling from Union guns, a fact which did not upset Bragg in the slightest. On the 2nd he had sent a message to Bishop Polk, commanding in Bragg's absence, ordering him to advance to Frankfort. His intention, based on the false assumption that the force in front of Frankfort constituted the advance guard of Buell's entire army, was that Smith's army should hold Buell frontally while Polk took the Union forces in the flank.

Polk would have complied with Bragg's order except that he had problems of his own. He had identified not just one advancing Union column but three. Still convinced that Sill's column was the main Union force, Bragg ordered a concentration on Harrodsburg and the transfer of Withers' Division to Smith.

On October 7th Bragg ordered Polk to turn and attack the Union columns in front of him. At the same time Buell was ordering his corps to concentrate at Perryville. The result was that on the evening of the 7th a sharp fight broke out over possession of Doctors Creek, the only water available to the Union forces short of the Chaplin River. The Northern troops, at this stage still only Gilbert's corps, were repulsed and spent a thirsty night.

Battle was resumed at dawn on the 8th when men from Sheridan's division took the creek and the hill beyond. This caused some consternation to Gilbert who ordered Sheridan not to bring on a general engagement. Sheridan complied by halting his attacks but brought up his reserve brigades and beat off the expected counterattack. Both sides called off their attacks for the rest of the morning which gave the Union the chance to form a battle line as McCook and Crittendon's corps came up.

Buell did not know how many Confederates he was facing and consequently his deployment was extremely faulty. His right was facing thin air while his left was overlapped by the Confederate right. Rather than deploy in sight of the Southern forces he imagined phantom divisions just out of sight and deployed to meet them. It was this deployment which prevented over half

Army of the Ohio
Maj. Gen. Don Carlos Buell

Attached to Army HQ
Cay's Bde (Cay; 1000 cav, no guns), E. McCook's Bde (E.M; 1900 cav, no guns), Zahm's Bde (Zah; 1400 cav, no guns)

I Corps
Maj. Gen. A. McCook

Rousseau's Division
Harris's Bde (Har; 2500 inf, 6 guns), Lytle's Bde (Lyt; 2500 inf, 6 guns), Starkweather's Bde (Sta; 2000 inf, 6 guns)

Jackson's Division
Terrill's Bde (Ter; 2800 inf, 6 guns), Webster's Bde (Web; 2800 inf, 6 guns)

II Corps
Maj. Gen. T. Crittenden

Smith's Division
Grose's Bde (Gro; 2500 inf, 6 guns), Hazen's Bde (Haz; 2400 inf, 6 guns), Cruft's Bde (Cru; 2400 inf, 6 guns)

Van Cleve's Division
Beatty's Bde (Bea; 2400 inf, 6 guns), Hawkins' Bde (Haw; 2400 inf, 6 guns), Matthew's Bde (Mat; 2400 inf, 6 guns)

Wood's Division
Hascall's Bde (Has; 2400 inf, 6 guns), Harker's Bde (Har; 2400 inf, 6 guns), Wagner's Bde (Wag; 1700 inf, 6 guns)

III Corps
Maj. Gen. C. Gilbert

Schoepf's Division
Walker's Bde (Wal; 2600 inf, 6 guns), Fry's Bde (Fry; 2600 inf, 6 guns), Steedman's Bde (Ste; 2600 inf, 6 guns)

Mitchell's Division
Gooding's Bde (Goo; 1700 inf, 4 guns), Carlin's Bde (Car; 2200 inf, 6 guns), Caldwell's Bde (Cal; 1900 inf, 6 guns)

Sheridan's Division
Laiboldt's Bde (Lai; 2600 inf, 6 guns), D. McCook's Bde (D.M; 2600 inf, 6 guns), Greusel's Bde (Gre; 2600 inf, 6 guns)

Army of the Mississippi
Gen. Braxton Bragg

Attached to Army HQ
Wharton's Bde (Wha; 500 cav, no guns), Wheeler's Bde (Whe; 1000 cav, no guns)

Right Wing
Maj. Gen. L. Polk

Cheatham's Division
Donelson's Bde (Don; 1500 inf, 4 guns), Stewart's Bde (Ste; 1500 inf, 4 guns), Maney's Bde (Man; 1500 inf, 4 guns), P. Smith's Bde (P.S; 1500 inf, 4 guns)

Left Wing
Maj. Gen. W. Hardee

Anderson's Division
J. Brown's Bde (J.B; 900 inf, 4 guns), Adams' Bde (Ada; 1200 inf, 4 guns), Powell's Bde (Pow; 1200 inf, 4 guns), T. Jones Bde (T.J; 900 inf, 4 guns)

Buckner's Division
Liddell's Bde (Lid; 1500 inf, 4 guns), Cleburne's Bde (Cle; 900 inf, 4 guns), Johnson's Bde (Joh; 1800 inf, 4 guns), Wood's Bde (Woo; 1500 inf, 4 guns)

the Union army taking part in the eventual battle.

Bragg arrived on the battlefield about 10 AM wondering why his orders to attack had not been carried out.

Polk replied that he believed his three divisions, only 16 000 men, were facing the bulk of the Union army. Consequently he deemed it unwise to attack and had delayed until Bragg arrived.

Bragg ordered Polk to attack at once and so just after 1 PM the men of Buckner and Cheatham's divisions erupted out of the woods into McCook's two divisions. The lead Union brigade was that of Terrill, totally green and well in advance of the rest of the corps. Terrill's brigade had been ordered to advance to the Chapman River.

They were accompanied by their divisional commander, J. S. Jackson who was killed in the first volley. The brigade held until 2.30 PM and then broke when Terrill was shot dead.

PERRYVILLE - Brigades

UNIT NUMBER	1-127	1	2	3	4	5	6	7	8	9	10	11
UNIT I.D. (Full)	[9]	Donelson	Stewart	Maney	P.Smith	J.Brown	Adams	Powell	T. Jones	Liddell	Cleburne	Johnson
UNIT I.D. (Abbr)	[3]	Don	Ste	Man	P.S	J.B	Ada	Pow	T.J	Lid	Cle	Joh
UNIT SIZE	[3]	Bde	Bde	Bde	Bde	Bde	Bde	Bde	Bde	Bde	Bde	Bde
MAP LOCATION	(x,y)	22,10 (10,14)	21,10 (9,13)	21,9 (8,14)	23,10 (15,17)	15,11 (15,17)	14,12 (9,16)	17,11 (7,17)	16,12 (15,17)	18,11 (12,11)	20,10 (12,17)	19,10 (13,16)
CORPS	0-15	0	0	0	0	0	0	0	0	0	0	0
DIVISION	0-39	1	1	1	1	2	2	2	2	3	3	3
ARRIVAL	0-95	0	0	0	0 (8)	0 (1)	0	0	0 (1)	0	0	0
UNIT TYPE	0-3	0	0	0	0	0	0	0	0	0	0	0
OBJECTIVE	0-23	0	0	0	0	0	0	0	0	0	0	0
SMALL ARMS	0-31	1	1	1	1	1	1	1	2	1	2	1
ARTILLERY	0-31	1	5	4	2	1	2	1	4	1	1	1
TROOP STREN.	0-31	15	15	15	15	9	12	12	9	15	9	18
MOVEMENT	0-15	5	5	5	5	5	5	5	5	5	5	5
BATTERY STR.	0-15	2	2	2	2	2	2	2	2	2	2	2
SHATTERED	0-1	0	0	0	0	0	0	0	0	0	0	0
LEADERSHIP	0-7	4	6	5	3	4	5	4	3	5	6	7
COHESION	0-7	7	7	7	7	7	7	7	7	7	7	7
EXPERIENCE	0-7	5	5	5	6	2	6	5	1	6	3	6
REGIMENTS	0-7	5	5	5	5	3	4	4	3	5	3	6
LIKELIHOOD	0-7	7	7	7	7	7	7	7	7	7	7	7

UNIT NUMBER	1-127	12	13	14	20	21	22	23	24	25	26	27
UNIT I.D. (Full)	[9]	Wood	Wharton	Wheeler	Harris	Lytle	Starkw'ther	Terrill	Webster	Grose	Hazen	Cruft
UNIT I.D. (Abbr)	[3]	Woo	Wha	Whe	Har	Lyt	Sta	Ter	Web	Gro	Haz	Cru
UNIT SIZE	[3]	Bde	Bde	Bde	Bde	Bde	Bde	Bde	Bde	Bde	Bde	Bde
MAP LOCATION	(x,y)	19,11 (11,16)	10,10 (18,15)	8,9 (6,15)	17,9 (26,2)	15,8 (26,3)	16,9 (26,2)	19,8 (26,1)	18,9 (26,4)	6,5 (0,2)	5,5 (0,3)	4,5 (0,1)
CORPS	0-15	0	0	0	0	0	0	0	0	0	0	0
DIVISION	0-39	3	0	0	8	8	8	9	9	10	10	10
ARRIVAL	0-95	0	0	0	0 (4)	0 (4)	0 (5)	0 (4)	0 (4)	0 (6)	0 (5)	0 (6)
UNIT TYPE	0-3	0	2	2	0	0	0	0	0	0	0	0
OBJECTIVE	0-23	0	0	0	0 (3)	0 (3)	0 (3)	0 (13)	0 (13)	0 (5)	0 (5)	0 (5)
SMALL ARMS	0-31	3	5	5	1	1	1	1	1	1	1	1
ARTILLERY	0-31	4	0	0	5	2	3	5	4	2	3	4
TROOP STREN.	0-31	15	5	10	25	25	20	28	28	25	24	24
MOVEMENT	0-15	5	9	9	5	5	5	5	5	5	5	5
BATTERY STR.	0-15	2	0	0	3	3	3	3	3	3	3	3
SHATTERED	0-1	0	0	0	0	0	0	0	0	0	0	0
LEADERSHIP	0-7	6	5	7	3	4	2	1	2	2	4	3
COHESION	0-7	7	7	7	7	7	7	7	7	7	7	7
EXPERIENCE	0-7	5	5	6	4	3	2	0	1	3	1	1
REGIMENTS	0-7	5	2	7	5	5	4	4	4	5	5	5
LIKELIHOOD	0-7	7	7	7	7	7	7	7	7	7	7	7

UNIT NUMBER	1-127	28	29	30	31	32	33	34	35	36	37	38
UNIT I.D. (Full)	[9]	Beatty	Hawkins	Matthew	Hascall	Harker	Wagner	Walker	Fry	Steedman	Gooding	Carlin
UNIT I.D. (Abbr)	[3]	Bea	Haw	Mat	Has	Har	Wag	Wal	Fry	Ste	Goo	Car
UNIT SIZE	[3]	Bde	Bde	Bde	Bde	Bde	Bde	Bde	Bde	Bde	Bde	Bde
MAP LOCATION	(x,y)	3,3 (0,4)	2,4 (0,5)	3,4 (0,6)	1,2 (0,2)	0,3	1,3 (0,1)	8,4 (10,0)	7,4 (9,0)	8,5 (9,0)	9,5 (8,0)	10,7 (10,0)
CORPS	0-15	0	0	0	0	0	0	0	0	0	0	0
DIVISION	0-39	11	11	11	12	12	12	13	13	13	14	14
ARRIVAL	0-95	0 (7)	0 (7)	0 (7)	0 (8)	0 (8)	0 (8)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)
UNIT TYPE	0-3	0	0	0	0	0	0	0	0	0	0	0
OBJECTIVE	0-23	0 (5)	0 (5)	0 (5)	0 (6)	0 (6)	0 (6)	0	0	0	0	0
SMALL ARMS	0-31	1	1	1	1	1	1	1	1	1	1	1
ARTILLERY	0-31	3	5	4	5	2	6	2	4	3	4	2
TROOP STREN.	0-31	24	24	24	24	24	17	26	26	26	17	22
MOVEMENT	0-15	5	5	5	5	5	5	5	5	5	5	5
BATTERY STR.	0-15	3	3	3	3	3	3	3	3	3	2	3
SHATTERED	0-1	0	0	0	0	0	0	0	0	0	0	0
LEADERSHIP	0-7	1	2	3	4	5	3	4	4	4	5	4
COHESION	0-7	7	7	7	7	7	7	7	7	7	7	7
EXPERIENCE	0-7	1	1	1	4	3	4	1	3	5	5	3
REGIMENTS	0-7	5	5	5	5	5	4	5	5	5	3	4
LIKELIHOOD	0-7	7	7	7	7	7	7	7	7	7	7	7

The remaining brigades of McCook's corps found themselves in turn assailed by the Confederate advance. Starkweather's brigade held out for longer than most of the others but it broke too. The Confederate artillery was being handled very effectively, a number of Union positions were outflanked by enfilading artillery fire. The line was thrown back in disorder for nearly a mile and fifteen guns were lost.

Gilbert was informed at 2.30 PM that all McCook's brigades were engaged. He offered no assistance although Sheridan, on his own initiative pushed his batteries forward so that they could engage the advancing Confederates. Seeing the effect Sheridan's fire had on the Southern advance, Gilbert detached Steedman and Gooding's brigades which counterattacked the advancing confederates.

Anderson's division constituted at once the Confederate reserve and left flank. Seeing the damage caused by Sheridan's batteries Anderson attacked the Union positions and was repulsed with heavy losses. The other divisions of Gilbert's corps were ordered to close up on Sheridan and Carlin's brigade counterattacked the Confederate left flank. This attack broke Anderson's division and Carlin was able to pursue the fleeing southerners to the outskirts of Perryville.

The intervention of Gilbert's corps allowed the Union left to stabilise and hold on until night. It was little enough, at no point in the battle were the men of Gilbert's corps of 21 000 facing more than 2500 enemy.

Crittendon's corps, however, failed to fire a single shot in anger. From start to finish their commander was convinced that there were Confederate troops in front of him, just waiting to attack. During the night Buell ordered Crittendon to prepare his men to attack

Brigades (Cont.)

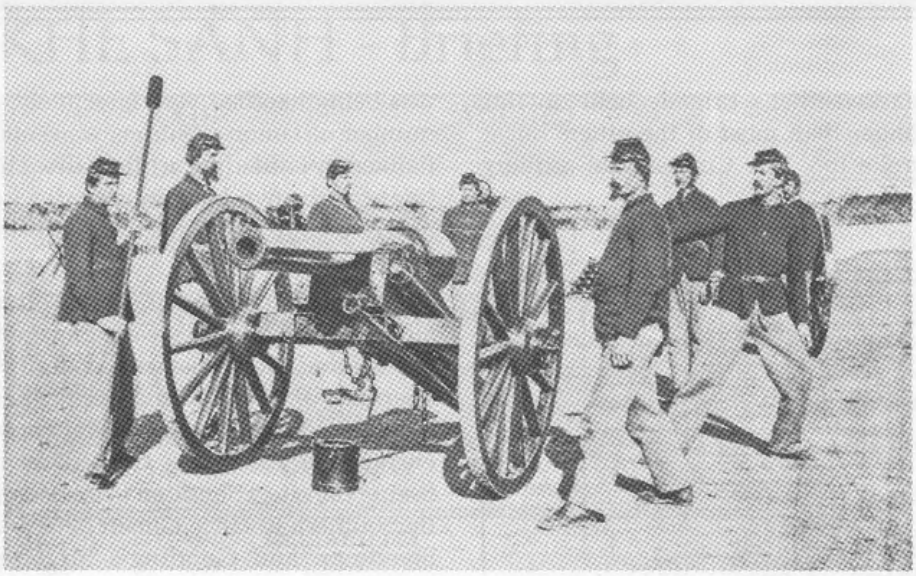
UNIT NUMBER	1-127	39	40	41	42	43	44	45
UNIT I.D. (Full)	[9]	Caldwell	Laiboldt	D.McCook	Greusel	Cay	E.McCook	Zahm
UNIT I.D. (Abbr)	[3]	Cal	Lai	D.M	Gre	Cay	E.M	Zah
UNIT SIZE	[3]	Bde	Bde	Bde	Bde	Bde	Bde	Bde
MAP LOCATION	(x,y)	9,6 (11,0)	12,7 (8,0)	13,7 (8,1)	11,6 (7,0)	0,5 (0,2)	15,5 (9,0)	10,2 (11,0)
CORPS	0-15	0	0	0	0	0	0	0
DIVISION	0-39	14	15	15	15	0	0	0
ARRIVAL	0-95	0 (1)	0	0	0	0 (5)	0 (7)	0 (1)
UNIT TYPE	0-3	0	0	0	0	2	2	2
OBJECTIVE	0-23	0	0	0	0	0	0	0
SMALL ARMS	0-31	1	1	1	1	4	4	4
ARTILLERY	0-31	4	5	3	2	0	0	0
TROOP STREN.	0-31	19	26	26	26	10	19	14
MOVEMENT	0-15	5	5	5	5	8	8	8
BATTERY STR.	0-15	3	3	3	3	0	0	0
SHATTERED	0-1	0	0	0	0	0	0	0
LEADERSHIP	0-7	3	5	3	4	3	4	2
COHESION	0-7	7	7	7	7	7	7	7
EXPERIENCE	0-7	1	6	3	5	3	3	3
REGIMENTS	0-7	4	4	4	4	3	4	3
LIKELIHOOD	0-7	7	7	7	7	7	7	7

PERRYVILLE - Corps

CORPS NUM.	1-39	1	2	3	4	5
CORPS I.D.	[9]	Polk	Hardee	McCook	Crittendon	Gilbert
MAP LOCATION	(x,y)	22,11 (9,14)	16,13 (11,7)	17,5 (26,2)	4,3 (0,2)	10,5 (9,0)
TYPE	0-1	0	0	0	0	0
ARRIVAL	0-95	0	0	0 (4)	0 (8)	0 (1)
ORDER	0-2	0	0	1 (0)	2 (0)	1 (0)
OBJECTIVE #1	0-23	3	3	3 (13)	0 (4)	4
OBJECTIVE #2	0-23	1	4	0 (12)	0 (6)	0 (5)
MOVEMENT	0-15	8	9	8	6	6
DAILY COMM.	0-15	0	0	0	0	0
LEADERSHIP	0-7	3	5	1	3	2
STAFF	0-7	4	4	2	3	2
STRENGTH	0-7	2	2	2	2	2
LIKELIHOOD	0-7	7	7	7	7	7

PERRYVILLE - Divisions

DIV. NUMBER	1-39	1	2	3	8	9	10	11	12	13	14	15
DIVISION I.D.	[9]	Cheatham	Anderson	Buckner	Rousseau	Jackson	Smith	Van Cleve	Wood	Schoepf	Mitchell	Sheridan
CORPS	0-15	1	2	2	3	3	4	4	4	5	5	5
TYPE	0-1	0	0	0	0	0	0	0	0	0	0	0
ORDERS	0-2	0	1	0	1 (0)	1 (0)	2 (0)	2 (0)	2 (0)	2 (0)	2 (0)	1 (0)
OBJECTIVE #1	0-23	3	12	3 (4)	3	3 (13)	0 (5)	0 (5)	0 (5)	0 (2)	0 (3)	4 (2)
OBJECTIVE #2	0-23	1	0	4 (1)	0 (13)	0 (12)	0 (6)	0 (6)	0 (6)	0 (4)	0 (13)	0 (6)
LEADERSHIP	0-7	5	2	5	3	1	3	3	3	3	3	7
STAFF	0-7	4	3	4	4	3	3	3	3	3	3	4



Heavy Metal
The 10lb. Parrott Gun was the one of the mainstays of both armies in the Civil War

at first light. When the attack had failed to materialise by 8 AM Buell sent an angry message to Crittendon who replied that his men were prepared to attack as ordered. Buell gave the attack orders in terms which could not possibly be ambiguous and finally Crittendon moved forward. By the time his men came across the Confederate positions they had been empty for eight hours.

Buell had missed his opportunity of crushing one wing of Bragg's army. His fear of being defeated by a large force waiting just over the hill caused him to receive a sound reverse from the tiny army he should have overwhelmed. When it came to counting the casualties Buell found he had lost 4211 men to Bragg's 3396. The only consolation for the Union was that their losses were largely raw recruits who could be replaced far more easily than Bragg's veterans.

Two days later Buell had his last chance to rescue his career as he came up to find Bragg and Kirby Smith combined and deployed in front of Harrodsburg. The Confederates could hardly have had more than 40 000 while Buell was about to be reinforced by Sill's division from the northern column, which would have given him 60 000. Neither general decided to bring on another engagement and Bragg retired overnight.

This game was repeated two days later in another position with similar lack of results. Buell commenced a flank march to work Bragg out of his position and Bragg commenced the long unbroken retreat to Chattanooga. Even here Buell could have pressed the Confederate columns hard and gathered up a harvest of stragglers and abandoned equipment, but a hard pursuit was not in Buell's nature. Bragg reached Knoxville on October 24th and the campaign was over.

Like Lee's Maryland campaign which ended at Antietam, Bragg had gone north and had been forced to retreat. So what, if anything, had he achieved. The Confederate Army of the Mississippi had postponed any Federal advance in the western theatre for the better part of the summer campaign season. They had captured large numbers of small-arms, 2 000 000 cartridges, 30 guns and they had lived off the Union for the entire campaign.

The debit side was that they were ultimately repulsed, but in the absence of large numbers of Kentucky recruits that was inevitable. What was not inevitable was that the Confederate army would emerge intact from their raid. Buell had a number of opportunities, of which Perryville was the best, of destroying some or all of Bragg's force. Throughout the campaign though, Buell misread Bragg's intentions and, in an attack of the McClellans, talked up the numbers of the enemy.

His one flash of good generalship was in the days leading up to Perryville when he split his force and confused Bragg into weakening his already outnumbered left wing. But what use is a general who creates great opportunities and then proves too timid to take them. Bragg was lucky to survive the Kentucky campaign and because he did so he survived as a general. Buell was not so fortunate. On October 24th, the same day Bragg reached Knoxville, Halleck sent a telegram to Buell informing him of his replacement by William Rosecrans.

CREATING THE SCENARIOS

There are two scenarios, both dealing with the battle of Perryville. The first gives the historical situation with most of the Union Army given reserve orders. The second scenario explores the possibilities had Buell been more resolute on the day of the battle. All units are given attack orders and the scenario commences somewhat earlier in the day. Where values are different from one scenario to the other the number in parentheses refers to the second scenario.

Armies

SIDE	N/S	SOUTH	NORTH
COMMANDER	[9]	Bragg	Buell
SECOND I.C.	[9]	-	Thomas
ARMY I.D.	[11]	Army of the	Army of the
	[11]	Mississippi	Ohio
MAP LOCATION	(x,y)	17,15 (15,17)	9,0
ARRIVAL	0-95	0	3 (0)
OFF. OBJ. #1	0-23	3	5 (5)
OFF. OBJ. #2	0-23	1 (0)	6 (7)
DEF. OBJ. #1	0-23	12 (4)	3 (-)
DEF. OBJ. #2	0-23	6	4 (-)
MOVEMENT	0-15	7	4 (6)
STAFF	0-7	5	2
STRENGTH	0-7	3	3
LEADERSHIP	0-7	3	1 (3)

PERRYVILLE - Terrain Effects Chart

TERRAIN #	0-31	0	1	2	3	4	5	6	7
TERRAIN NAME	[11]	Chaplin R	Bridge	Open	Hills	Woods	Rugged Wd	Perryville	Buildings
SIGHTING VAL.	0-7	0	0	1	3	4	6	2	2
MOVEMENT	0-7	0	2	1	2	2	3	1	1
COVER VALUE	0-7	0	0	1	3	4	5	4	2
FORT VAL. (N)	0-7	0	0	0	0	0	0	0	0
FORT VAL. (S)	0-7	0	0	0	0	0	0	0	0

PERRYVILLE - Objectives

OBJ. NUMBER	1-23	1	2	(2)	3	4	5	6	7	8
OBJ. NAME	[11]	Union HQ	Critt' HQ	(Doctors Ck)	Schlhouse	Peters Hill	Tollhouse	Perryville	Crawford H	Wlkrs Bnd
MAP LOCATION	(x,y)	9, 0	4, 3	(12, 5)	16, 5	12, 7	10, 12	9, 15	15, 17	21, 12
START (N)	1-95	1	1	(1)	1	1	1	1	1	1
STOP (N)	1-95	7 (16)	7	(16)	7 (16)	7 (16)	7 (16)	7 (16)	7 (16)	7 (16)
VPs/TURN (N)	0-255	0	0	(1)	2	0 (2)	2 (3)	10	10	10
VPs AT END (N)	0-255	1	1	(10)	10	5 (10)	5 (15)	10	10	10
MANEUVER (N)	0-15	0	0	(0)	0	0	0	0 (5)	0	0
START (S)	1-95	1	1	(1)	1	1	1	1	1 (5)	1 (5)
STOP (S)	1-95	7 (16)	7	(16)	7 (16)	7 (16)	7 (16)	7 (16)	7 (16)	7 (16)
VPs/TURN (S)	0-255	5	5	(3)	2	3 (1)	0 (1)	0	0	0
VPs AT END (S)	0-255	25	25	(25)	10	15	5 (10)	0 (5)	0 (1)	5
MANEUVER (S)	0-15	0	0	0	5	0	0	0 (5)	0	0

OBJ. NUMBER	1-23	9	10	11	12	(12)	(13)
OBJ. NAME	[11]	To Dixville	To Har'berg	To Danville	Hardee HQ	(The Bridge)	(Burnt Barn)
MAP LOCATION	(x,y)	26, 15	15, 17	11, 17	16, 13	(17, 15)	(15, 10)
START (N)	1-95	1	1	1	1	(1)	(1)
STOP (N)	1-95	7 (16)	7 (16)	7 (16)	7	(16)	(16)
VPs/TURN (N)	0-255	10	10	10	2	(5)	(3)
VPs AT END (N)	0-255	25	10	10	5	(15)	(15)
MANEUVER (N)	0-15	0	0	0	0	(5)	(10)
START (S)	1-95	1 (5)	1 (5)	1 (5)	1	(1)	(1)
STOP (S)	1-95	7 (16)	7 (16)	7 (16)	7	(16)	(16)
VPs/TURN (S)	0-255	0	0	0	0	(1)	(1)
VPs AT END (S)	0-255	0 (1)	0 (1)	0 (1)	2	(5)	(10)
MANEUVER (S)	0-15	0	0	0	0	(5)	(0)

PERRYVILLE - Small Arms

SMALL ARMS #	1-31	1	2	3	4	5
SM. ARMS I.D.	[11]	Rifle Mus	S'Bore Mus	Mxd Mus	Carbine	Mxd Carb
RANGE	0-1	1	1	1	1	1
FIRE VALUE	0-7	5	2	3	4	3
MELEE VALUE	0-7	6	6	6	6	6

If this is the first time you have tried to transfer a magazine scenario onto a save-game disk (or hard disk), we recommend you follow these directions.

The letters in parentheses after each heading refer to the corresponding section in the Decisive Battles manual.

There is some additional information for IBM users at the end of this section. Be sure to read it, especially if you have an EGA/VGA card and want to take advantage of our "full map" graphics.

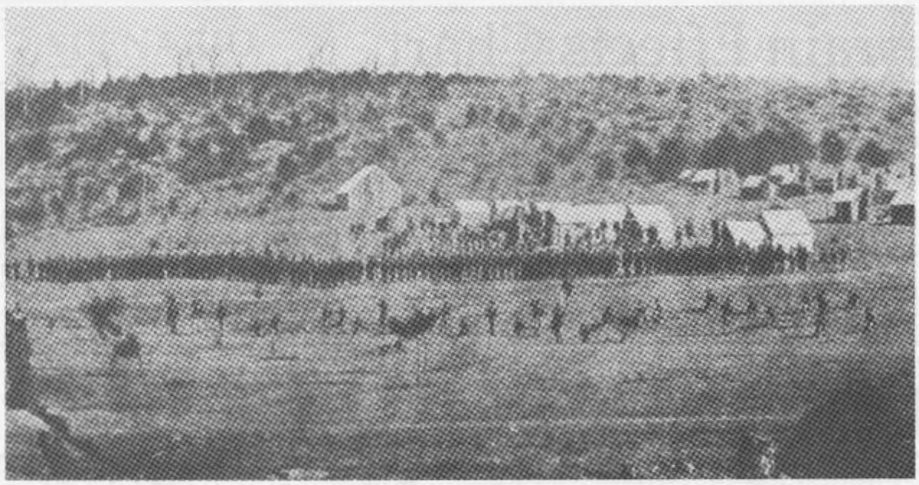
Macintosh users should note there are some changes to the numbering system in their design manual and that access to the various design routines is obtained through conventional, pull-down Mac menus.

Preparing the Disk [3]. Boot up the Master Disk and select <CREATE> from Menu H. Select <SCENARIO> from Menu B. <LOAD> any historical scenario. You have been processed through to Menu J. Select the <DISK> line from that menu.

If you have one disk drive, remove the Master Disk and replace it with a blank disk. If you have two drives, remove the Scenario Disk from the second drive and replace it with a blank disk.

Select <FORMAT> from the on-screen menu. Once this is done, select <SAVE> from the menu and store any of the historical scenarios in any unused save-game location. This procedure prepares the template on which we will build the *Perryville* scenarios.

Hard disk users should note that all they need is enough room on their hard disk to hold the new scenarios. Macintosh users should note that they do not need to use an existing scenario as the



The Firing Line
A regiment in line of battle. Note the skirmishers several yards ahead of the main line

template. They can select *New* from the File Menu.

The WarPlan™ menus are displayed on the back of the game menus card. Refer to this when necessary. Macintosh users should check their WarPlan™ manual for the location of the different design routines.

Title [5c]. There are three lines of text for the title of each scenario:

Perryville (Buell's Attack)

Buell's Missed Opportunity (Perryville Rewritten)

8th October 1862

Bracketed values refer to the second scenario.

Go back to Menu J and re-save the game in the same location.

Map Size [5a(i)]. The top left sector is 0. The bottom right sector is 5. Macintosh dimensions are 26 x 18.

Define Terrain [5a(ii)]. The accompanying Terrain Effects Chart lists the details of the active terrain types for this scenario. Select (or paint) the icons of your choice to represent the seven terrain types.

Create Map [5a(iii)]. Select the <CLEAR> line from Menu J. Clear the map and the data. Use the accompanying map to build up the screen map. Do not forget to assign control to each hex.

Save the game again. How often you save really depends on how lucky you feel. After several major disasters, I choose to save after each section is completed.

Limits [5b(i)]. Before you can enter the military units for each side, you must set the force limits. The force limits are as follows; corps (5), divisions (10), brigades (20). Apple II and C64 users must also set the artillery weapon limit to 11.

Weapons [5b(ii)]. Consult the Small Arms and Artillery Tables and enter the data as shown.

Forces [5b(iii)]. Edit the North (Union) Army HQ and the South (Rebel) Army HQ as shown in the data tables.

The objectives assigned to the Army HQs will not appear on the screen until after the objective data base has been entered.

The North has 3 corps. The South has 2 corps. Consult the Corps Table and enter the data as shown.

The North has 8 divisions. The South has 3 divisions. Consult the Divisions Table and enter the data as shown.

The North has 26 brigades. The South has 14 brigades. Consult the Brigades Tables and enter the data as shown.

Bracketed values refer to the second scenario.

Objectives [5b(iv)]. There are 12 objectives in the first scenario and 13 in the second. Consult the Objectives Table and enter the data as shown. Bracketed values refer to the second scenario.

Scenario Setup [5d(i)]. Enter the following data. Date (8), Month (10), Year (62), Century (18), North Maximum Hex Movement is (5,0,8,5,5) for scenario 1 and (5,0,8,5,6) for scenario 2, South Maximum Hex Movement is (5,0,8,5,8) for both scenarios, neither side is encamped or entrenched (the latter introduced only in Volume II).

VP awards are 25 per leader, 5 per 100 men (North-scenario 1), 15 per leader, 5 per 100 men (North-scenario 2), 25 per leader, 6 per 100 men (South-scenario 1) and 25 per leader, 5 per 100 men (South-scenario 2). IBM and Mac-

PERRYVILLE - Artillery

ARTILLERY #	1-31	1	2	3	4	5	6
ARTILLERY I.D.	[11]	6lb S'Bore	Napoleon	10lb Parrot	12lb How	3" Rifle	20lb Parrot
RANGE	0-5	2	3	3	2	4	4
RATE OF FIRE	0-7	4	4	4	4	3	3
EFFECT'NESS	0-7	2	5	3	3	4	4
PENETRATION	0-7	1	2	3	1	4	5

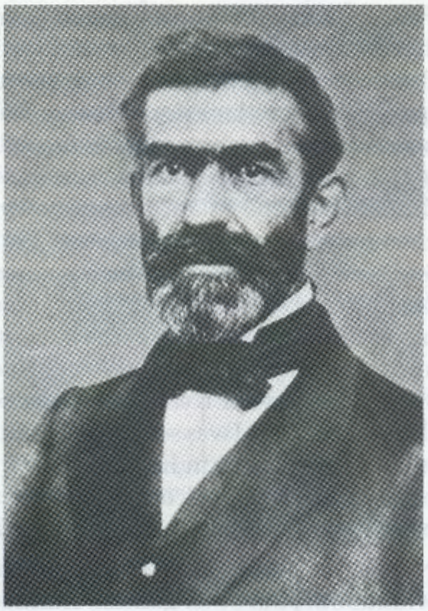
intosh users should note the combat value for this scenario is 3 for both sides.

Scenario Details [5d(ii)]. These are both one day scenarios. Enter the following data for Day 1 of scenario 1. The weather is Clear (0), the North is Defensive (0) and the South is Offensive (1), 2pm to 6pm are day (3), move (1) turns, 7pm is a dusk (2), move (1) turn and 8pm is a dusk (2), End (2) turn. Enter the following data for Day 1 of scenario 2. The weather is Clear (0), the north is Offensive (1) and the south is Defensive (0), 5 am is a dawn (1), move (1) turn, 6 am to 6 pm are day (3), move (1) turns, 7pm is a dusk (2), move (1) turn and 8 pm is a dusk (2), End (2) turn.

Finally, save again and the scenario is ready to play.

NOTES FOR IBM USERS

IBM users with CGA, MCGA, Tandy or Hercules graphics can create the scenario using the advice given above. There is a minor change in the weapons data base. You do not have to set limits for weapons. There is space for 31 weapons of each type.



Braxton Bragg
A capable officer but one of the most hated men in the Southern Confederacy

IBM users with EGA or VGA cards must first create the game map with the "full-map" graphics disabled. To do this, run the program as DB2 f (or DB3 f or DB1 f) which will by-pass the "full-map" graphics. Select a scenario as a template as explained above and save it in a save-game location. Build up the map in the usual way and save when finished. The rest of the data for the scenario may be entered with the "full-map" graphics either disabled or enabled. There is a full explanation of "Full Map" graphics in Issue 14.

Re-boot the program (this time with the "full-map" graphics enabled) and use the "full-map" WarPaint™ tool to build up the map. In other words, the "full-map" graphics are only graphic images and do not affect the play of the game.

A NOTE ON .LBM FILES

The .lbm files contain the graphic images. DPaint2™ from Electronic Arts can be used to manipulate the file. Up to 250 hexes can be created but DPaint2™ must be used to change the size of the .lbm file. To do this, use the 'Page Size' function to alter the height of the file.

The Decisive Battles program reads the size of the .lbm file on loading and adjusts the WarPaint™ values automatically. If you don't want to worry about manipulating .lbm files, choose a scenario with a 250-hex .lbm file as the template to build the new scenario on.

When saving an .lbm file, a temporary file is created first. When the temporary file is successfully saved the original is deleted and the temporary file renamed. This means there must be enough space on the current disk to hold the temporary file.

Macintosh users will find no such complications when it comes to creating scenarios. Follow the directions given in the design section of any *Decisive Battles* game manual.

Kirby Smith
One of the few generals of the war whose natural pessimism towards military operations did not prevent him from getting things done

PLAYER'S NOTES

Historical Scenario

Union. There is not a lot you can do here to stop the Confederate "good ol' Boys" cutting through McCook's green Corps. You are better off riding across to Gilbert and trying to bring him into the fight. With luck you will have enough time to put in a good attack on the Confederate left, especially if the Southern player has attacked Sheridan's men already.

Confederate. Attack, attack and attack again. It won't get much easier than this as your veterans pitch into the green Yankees. Be careful not to spread your men too far to the left or Sheridan may just be persuaded to disobey his orders and attack you. If Buell gets personally involved with the defence your job will be a bit tougher but at least you won't have to worry about a counterattack at the end of the game.

Variant Scenario

Union. This is the way it ought to have been. You will spend your time coordi-

nating each new division as it comes up to attack. It will be a tough fight as the Rebs are a lot better man for man but in the end numbers are sure to count. If you can keep your men moving and get across the Chaplin you will win handsomely.

Confederate. The first thing you have to do is to change all your men's attack orders. If you allow their orders to stand they will pocket themselves between the advancing Union wings. You must choose the positions to make your stand and you must know when to withdraw. With your advantage in troop quality you will be able to make the North pay dearly for every yard of southern soil they advance over. ◆

LETTERS
Continued from p. 20

created the system, I think you would have the best feel for how these real-life statistics should be transferred into the world of the computer. Such an article would not be very long, though it would require some research. In fact, even some formulas for converting statistics would probably suffice.

I also have a question (the principal motive behind this letter) concerning designing scenarios in the Decisive Battles series. How do you prevent the "spaghetti-bowl" intersections that occur when two roads converge on one another? Since the system automatically connects two adjacent road hexes with eachother, I often find that hexes I don't want joined by roads are. I worked around this problem in my own scenarios on the Apple by fiddling with the road net to avoid having roads in adjacent hexes unless they were supposed to intersect, but when I began typing in the "Champions Hill" scenario from issue #13, I realised that unless I wanted to re-design your map, I would have to have some freeway interchange road junctions thereon. I also noticed that the maps in the game's scenarios had road hexes that lay adjacent to eachother without being joined: How do you do that? And does the same technique work in the Battlefront game system?

Let me tell you again how much I like your products, and how much I eagerly await each new release and each new issue of Run 5. I will also await with bated breath your answer to the question of how roads were constructed during the Civil War. Again, thanks for great games, a great magazine, and great support.

Yours Truly

Robert D. Williams

Woodbridge VA

USA

Robert, there is a very simple way to fix your road problem. If you want to remove a road link across a given hexside you must first type S(1-3) 1= north, 2= northeast, 3= southeast to identify the hexside. You will then receive a request for "type" and you should enter "4" which will identify the hexside as passable but remove any roads. Hopefully that will solve all your problems, keep on playing. Ed.

Dear Sirs,

Very pleased to find that SSG is alive and well after receiving the latest Run 5 issue.

After such a long time between issues I feared the worst. Glad to see SSG is running well and with a new editor on board, look forward to a little more regularity in Run 5 issues and more great games.

Along with everyone else, it seems, I pass on my congratulations for the "Carriers at War" simulation. It is absolutely rivetting and I feel will lead to many broken relationships as some people just don't understand that protecting your carriers and sinking the opponents is much more important than cutting grass, washing the car, sleeping etc.

In the last issue you asked for feedback as to other Battlefront scenarios to bring back on IBM and Mac formats. Here are my favourites, and don't forget Normandy is not out on IBM yet.

-Arnhem, Anzio, Novorossik, Battleaxe, Mannerheim Line, Task Force South

Maybe as a scenario package?

Also for CAW don't forget Operation Pedestal, Issue 12.

Thanking You

Philip Lingard

Illawong

NSW Australia

Thanks for the letter Phil. I found that the only way I could justify the time I spent playing SSG games was to get a job with the company. As to those scenarios, we will probably convert them over to IBM and Mac format one by one for the magazine as we did with Saipan last issue. Its just a matter of finding the time, ha, time, I had some spare once.

Dear Sirs,

First let me tell you how much I enjoyed Carriers at War. Very much, OK? Besides being a darn good game, sporting a spiffy interface (for a change, but more on that later), and lots of flexibility, it gave me an insight into how dramatically the balance of sea power changed in the Pacific between 1941 and 1945. The Pacific Theater has never been an interest of mine, but your game inspired me to read up on the subject, and even, ultimately, to buy Aces of the Pacific, so I could try flying a few of those planes that I was so casually sending off to destruction in Carriers. Perhaps you should work out some sweetheart deals with simulator companies!

Now to the others. Carriers is fine, but what about your other games? The Mac versions of the Battlefront and Decisive Battles series are fine, but that's

Continued on p. 42

Carriers at War Replay

Trout vs. Trout for the Grand Prize of the Australian Way of Life

Umpired by Stephen Hand

As a boy I remember my mother (Hi Mum) telling me how she watched her father dig a family air raid shelter in the back yard. Now it is highly unlikely that the Japanese would have tried to attack Australia, the logistic difficulties involved in the conquest of such a huge piece of land would have made Hitler's invasion of Russia seem like a rational and well considered decision. The military realities did not, however, lessen the fears of the Australian people, especially after Darwin was bombed and Sydney was attacked by midget submarines.

It is not , therefore, surprising that the Battle of the Coral Sea holds a special place in the collective Australian heart. Although the battle was a tactical Japanese victory it was also a strategic defeat as it put an end to their plans to land an invasion force at Port Moresby on the south coast of New Guinea. Consequently the Japanese army had to try to fight their way south over the top of the Owen Stanley Range. They failed.

Well, so much for history. Attempting to rewrite the facts in the current replay is that feared maestro of mayhem, Admiral Ian Trout. We had expected to oppose Ian with Gregor "I beat Ian once" Whiley but Gregor's titanic workload was victorious and so Ian proposed to play himself. No, this isn't as absurd as it may seem, Ian actually designed the intelligence file for the Japanese at Coral Sea. So it is that the very human Ian Trout will take the Allied side against his own fiendish intelligence in the ultimate refight of the Battle of the Coral Sea.

Ian chooses to play only the naval taskgroups, leaving the land based aircraft under computer control; "I trust my computer" he says.

Admiral Trout's initial plans are to take the battle to the enemy, attacking their base at Tulagi. By 03:25 on May 4th the Yorktown is in position to launch its first strike. Two squadrons of Dauntlesses fly off followed at 05:25 by the same number from the Lexington which has been sent by a different route just in case the Japanese carriers are in the area. The strikes go in with transports and minelayers hit. At 07:10 with the planes recovered the Yorktown fades back into the cloud banks.

The first enemy sighting comes in at 09:45 when one transport is reported just north of Milne Bay at the eastern tip of New Guinea. By 10:45 the same force is reported as one carrier and two minor ships, probably the Shoho. A similar sighting comes in at 12:30 from near Tulagi. By 13:30 this has been definitely flagged as the main carrier force, the Shokaku and the Zuikaku.

The speed of the Carriers is increased as Admiral Trout flees southward, seeking to avoid a confrontation with the main Japanese force at this early date. His calm is shattered by the air warning, Zeros and Kates have been sighted closing fast.

Admiral Crace, the commander of the Australian cruiser squadron is ordered to fall behind as a screening force to protect the flattops. Everyone waits in anticipation as the range gets shorter and shorter. Emergency CAP is scrambled. Finally, at the last minute the Japanese planes disappear, they have fallen short!

As the first day of battle ends Admiral Trout confides to his orderly, ordinary seaman Hand that he is quite pleased with the day's proceedings. He has hit the enemy's transports and according

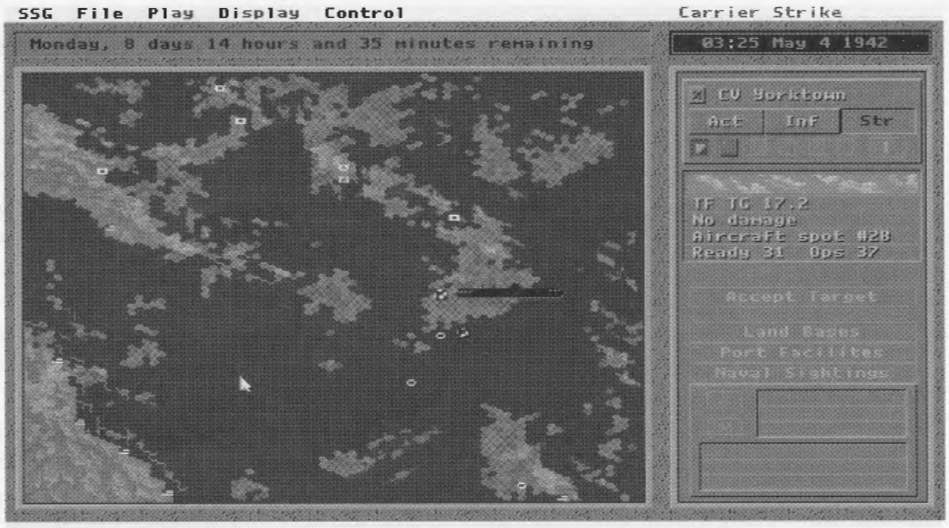


Fig. 1 *The Yorktown prepares to launch an air strike on Tulagi*

Fig. 2 Early success for the Allies as the Tulagi invasion force is hit with an air strike

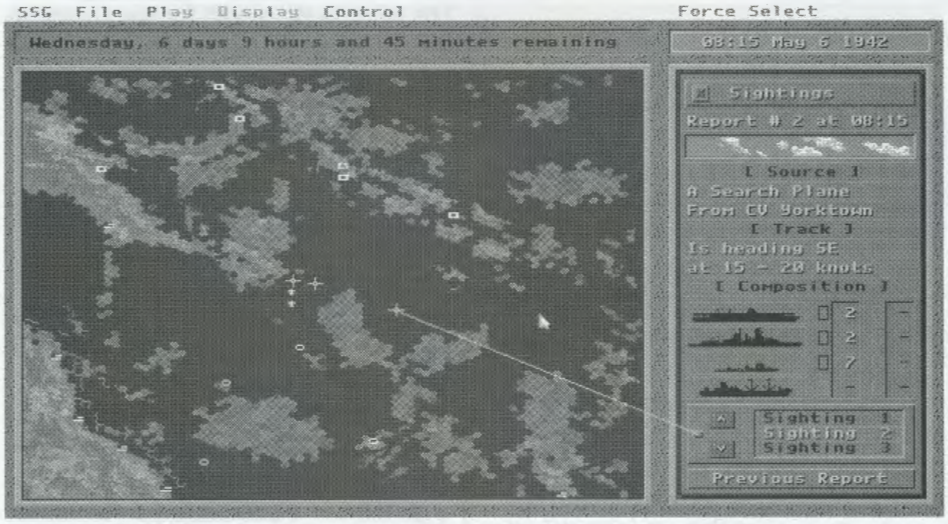


Fig. 3 The moment of truth as the Japanese carriers appear to the NE of the Yorktown

SSG File Play Display Control
Task Group Status
Wednesday, 6 days 7 hours and 10 minutes remaining
10:50 May 6 1942
Up Page Up Damage Cargo Speed VP's
CV Yorktown 33 50
CA Chester 33 20
CA Portland 23 20
CA Astoria 33 20
DD Anderson 35 5
DD Hammann 35 5
DD Russell 35 5
DD Morris 35 5
Down Page Down Scuttle CV Yorktown
TG 17.2
Act Mov Sur Sta
Waiting for
mission recovery
Speed = 23 knots
Flank = 23 knots
Action Stations
Fuel for 22 days
Task Group Status

Fig. 4 The sorry state of Task Group 17.2

to reports sunk two destroyers and two mine layers.

As both sides prepare for the resumption of hostilities at dawn, Trout plans his strategy. Both carriers steam WSW with the Australian squadron as an escort.

Early in the morning of the 5th of May the sighting reports begin to come in. They are confusing at first, two capital ships are purportedly NE of Milne Bay while three carriers are just off the eastern tip of New Guinea.

Eventually the three carriers are whittled down to one, the Shoho, and the two fleet carriers are identified SW of Tulagi. Trout's fleet is still well to the southwest of the Japanese and he intends waiting until the transports make their run around New Guinea. It is to Ian's advantage to hold off, he cannot afford to lose a carrier, not least before he has broken up the invasion fleet.

At 13:30 the transports appear south of Rabaul. They are steaming south. As night falls Trout makes a decision which could win or lose him the battle at a stroke. He detaches the Yorktown at 23:00 and sends it at flank speed towards the Jomard passage east of New Guinea. The range closes painfully slowly as dawn approaches.

It is not until 05:45 on the 6th of May that the Yorktown is in range of where our illustrious Admiral thinks the transports are. Two squadrons are flown off towards an early morning sighting. Everything depends on the Japanese carriers being sufficiently far away for the strike to go in and be recovered before the range can be closed. They aren't! At 08:15 both enemy fleet carriers appear well within strike range to the NE of the Yorktown. A sweat breaks out on the normally icy brow of the maritime man-mountain as he realises that he is a sitting target for the enemy's strikes.

The Yorktown is immediately ordered to retreat as word comes of the failure of its strike on what turned out to be a squadron of Japanese heavy cruisers. The Lexington will try to take advan-

tage of the situation to slip unnoticed NW to attack the Port Moresby invasion fleet.

At 10:15 the first planes appear over the Yorktown. Five minutes later the flattop takes its first bomb hit and at 10:40 a torpedo crashes into the side of the helpless ship.

The attacks continue on and off for two hours with the Chester and the Portland both sunk and the Yorktown a flaming wreck. For a while it appears as if the Yorktown, although out of the fight, will escape. This is not to be as the second strike hits her at 16:05. Three quick bomb hits and it is all over, the Yorktown goes to the bottom, and still all three Japanese carriers are undamaged.

By 17:00 however, the Lexington is in position to even the score. It is nearing the eastern tip of New Guinea, well out of strike range of the two main enemy carriers. A strike is launched at what is reported as a carrier, presumed to be the Shoho. A look of horror spreads across Ian's face as he realises it is actually the seaplane tender, Kamikawa. To add to his woes there are no hits.

Undaunted by this the Lexington continues to steam north, there is nothing that can damage him so he intends to play merry hell amongst the Islands drawing the Shokaku and the Zuikaku back to stop him and at the same time disrupting the invasion.

By the morning of the 7th the Lexington is heading for Rabaul. Worried about the presence of a cruiser squadron just to his south the Nautical Napoleon launches a strike against them at 10:55. The planes arrive at 12:50 and hit the cruisers hard.

Admiral Trout is beginning to regain his composure at 14:00 when the air raid warning sounds, no, not the Shoho with its handful of planes but land based Bettys from Rabaul. With a by now well rehearsed look of disbelief on his face Ian realises that he has forgotten about the Japanese ground bases and he gets ready to pay the price. The Bettys take a stack of losses but they close up ranks and keep on advancing. The last remaining allied flattop is hit twice.

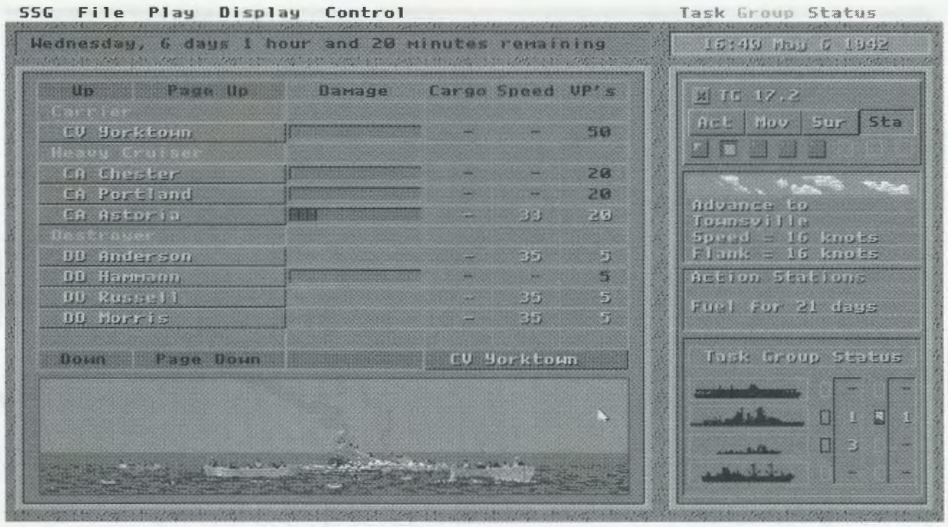


Fig. 5 What happens to Carriers which take on twice their number

Fig. 6 I feel sure the Lexington has seen better days

No sooner have the Bettys turned for home than Kates from the Shoho appear and luckily for Trout fail to hit any of the important ships. It is now time for Ian to concede defeat and cut his losses by at least salvaging one carrier from the shambles. As the Lexington heads for home, Crace's Australians turn to hold off the Japanese cruisers which are looking to finish the crippled Lexington.

For a while the surface battle appears even as both sides close to secondary gun range. The Japanese may have heavier shells but the Australians have truth and justice on their side. Unfortunately patriotism is no defence against Japanese firepower and the entire squadron is sent to the bottom!

The sacrifice has not been in vain, however as it allows the Lexington to escape and limp back to Townsville. The retreat of the Lexington, however, gives the Japanese uncontested control of the sea and they launch their invasion of Port Moresby. On the morning of May 10th the invaders come ashore. Ian waves his arms in impotence and yells, "I've created a monster, its smarter than me".

When asked to give a prediction of the victory points all Ian will say is that "I've got a feeling its going to be real bad".

Fig. 7 The heroic Australian ships go down to superior firepower

Fig. 8 The final result; so much for the white Australia policy

I'll leave you to pass judgement on the final outcome. The Allies lost one carrier and five cruisers to the Japanese loss of one cruiser. More importantly the Japanese were able to land their invasion force. Isolated outposts on the Australian mainland, such as Darwin, would have almost certainly been next in line.

Trout denies it has been a defeat, claiming that it proves the superiority of his intelligence. I'd make a snide comment but given my own performance at Coral Sea I'd better shut up. Anyway don't expect any new games from Ian for a while, as commanding officer of the Allied debacle he has been locked in his office until he finishes filling out "Lost and Destroyed" forms for a Carrier and five cruisers. ◆

LETTERS
Continued from p. 38

not where the big market is! Your Amiga versions take so bloody long to appear, and are so quirky when they finally do, that I'm not surprised you're giving up on them. The exception was Warlords, the Amiga version of which was great - still quirky, but great. But what about the biggest market of all - MS-DOS? (What we used to call IBM before Big Blue became Big Turkey).

Let's face it. Your IBM technology is stuck in 1985. No mouse interfaces, no pull-down menus, horribly chunky 320x200 EGA graphics... EGA? Give me a break! Frankly I find them unplayable - the convoluted menu system and cheesy graphics are just too much to bear. Let's not mention the sound...

And what are your competitors doing? Super VGA, mouse driven, modem-ready state-of-the-art experiences, that's what! OK, so their Artificial Intelligence is still pitiful, while yours is up there shining. So what? The average shmo who shells out for these things probably won't ever find that out because he won't get to first base with these old clunkers that you still put on the shelves. Where is the nineties version of Battlefront? Of Decisive Battles? Of Reach for the Stars, for gosh sakes? I'll tell you where. They're on teh shelves right now, and your competitors are making them. Not you - your competitors.

Right now there's a revival in the computer wargames market. Exciting new possibilities are opening up. People want SVGA graphics or better, friendly, mouse-driven interfaces, on-line help, animation sequences, decent music and sound - even speech, modem play, and more. The immediate future holds CD-ROM and all of its multimedia possibilities. People are looking at computer wargames in new ways, questioning the old assumptions. Why should a computer wargame always look like an old SPI hex-gridlock with square cardboard pieces? Why can't it look more like an army map? Or the real thing? Why can't units behave like the real thing, send back reports, request things from the player etc. etc. All these things and more will be in the computer wargames of the future.

We are now entering a new era. Don't rest on your laurels and miss the boat!

Lamont Cranston
Rockdale, NSW. Australia

Well Lamont thanks for a thought provoking letter. Before you run down our

Continued on p. 47

WARLORDS II

Designers Notes

by Gregor Whiley

In the Beginning . . .

The original Warlords was a best selling game, but some aspects of the game were limited by elements of the original design.

With Warlords II, we had a chance to start with a clean slate, and produce an optimal design which still retained all the exciting and enjoyable aspects of the original game. So Warlords II started by throwing out most of the original code.

FUNDAMENTALS

Graphics in *Warlords* were 640 x 200 x 16 colors. For *Warlords II*, we went to 640 x 480 x 16 colors. This is still a standard VGA mode, so does not require the user to struggle with VESA drivers, the source of many problems and bugs. This time around the pictures were done by resident artistic genius Nick Stathopolous, and the improvement is staggering.

To accommodate the step up in graphics mode, we needed more memory than the standard 640K. We chose memory routines that can use either EMS or XMS, thus eliminating nasty configuration choices for users. Also, you are not required to use, or not to use, a particular memory manager.

The extra memory requirements also meant that we had to specify 80386 or better CPUs. While some of today's games will theoretically run on 80286s, in practice they are so slow as to be unplayable, so we had little trouble in restricting CPU choice.

The most fundamental aspect of *Warlords II* is the game's database. What data to record, and how to record it are critical choices that affect every aspect of a game's development. In *Warlords II*, we are confident that we got it pretty right.

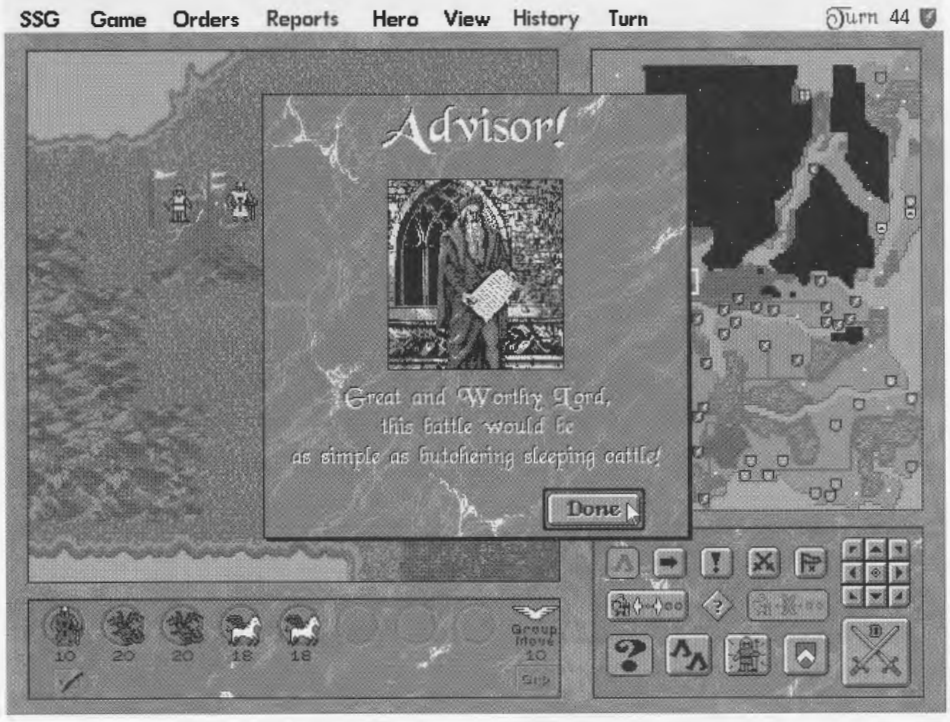
MOVEMENT ROUTINES

The movement routines in the original *Warlords* were a trifle eccentric (ha! ha! ha! I got heartily sick of losing my armies in the swamps around Enmouth!). Roger Keating's new routines bear no relation to their predecessors. Orders now persist across turns, so an army can be given a destination many turns distant, and will happily find its own way there. If the destination is over water, the army will move to a port, get on a boat, travel to the the debarkation point, get off the boat and continue moving overland.

The new routines are also much, much better at finding the most efficient path between destinations; and this path may change as hidden areas of the map become visible!

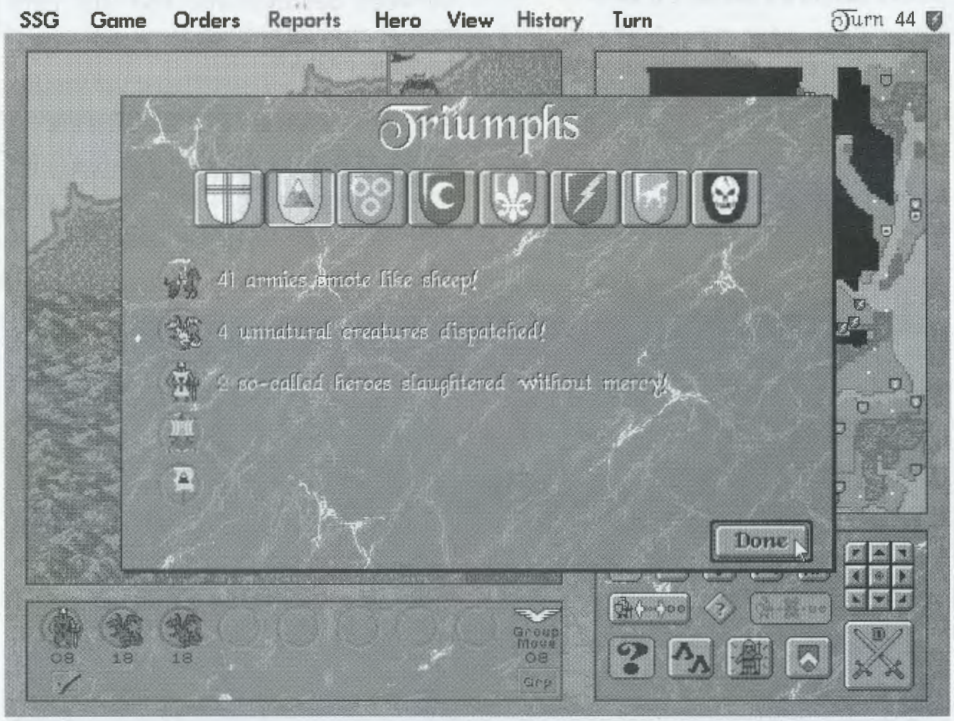
ARTIFICIAL INTELLIGENCE

Good AI requires a good database and good movement routines. If the computer can't get the right info, it can't



That's what I like to see! Another great victory about to be recorded for posterity. . .

Grafitti artists rejoice! You too can deface the public signposts throughout the land



Detailed screens will record all your splendid achievements. . .

make *intelligent* decisions. And, if it can't reliably get to any destination on the board, it won't be able to implement its decisions, even if they are correct! Because the fundamentals are correct, Roger's new AI routines are a huge improvement over those in *Warlords*. The new AI relishes battle, and can definitely look after itself in a fight.

As well as generic routines, we have added personalities to the computer players. People have often claimed to detect personality traits in our computer routines, when they weren't actually there. Now, you can play against named computer players, to add spice to the battles.

INTERFACE

Our interface design for *Warlords II* is the result of much hard work by all concerned, especially the tireless Steve Fawkner. We wanted the player to be able to do as much as possible on the screen, without having to open dialogs.

The new stack palette allows you to make all stack decisions without leaving the game screen. We've also added extensive feedback through different cursor shapes, and keyboard shortcuts for important functions. Because no one can anticipate exactly how people like to control their game, we've also added four user definable buttons, which can be associated with any command.

INFINITE WORLDS

Warlords II comes with several large scenarios, plus a few smaller games and a special tutorial. This is a big improvement over *Warlords* single scenario, but it doesn't stop there. The Random Map facility produces an infinite number of worlds to fight over. Combined with the Hidden Map option, *Warlords II* can guarantee a tough fight every time in the mystery of an unknown world.

PRODUCTIVITY INCREASE

Warlords II allows you to invest in the production of any army type you wish, although building the production capacity for an army of war elephants will cost you deep in the purse. There are also a greater number of army types to choose from, some twenty eight in all.

GAME OPTIONS

Warlords II has a number of game options, so users can choose how they wish to play the game.

Diplomacy - This adds a new dimension to the game. Players will be have to be very careful in picking fights. The new AI routines mean that the last thing you need to face is a computer player's coalition, united by your clumsy diplomacy, and itching to take you apart.

Quests - Heroes have a lot to do in *Warlords II*, but the rewards for individual exploits in quests can be high. Quests are given to specific heroes, and may require them to personally take particular cities, or slaughter a specified number of enemies, in order to qualify for a suitable reward.

Quick Start - This divides all cities in the game between the players, and allows players to get stuck into the set piece battles straight away.

Military Advisor - Sick and tired of losing those vital battles? Ask the military advisor to call the odds for a battle, and play close attention to his advice.

Other options control the order of player turns, strength of neutral cities, and information about enemy players.

SIMPLIFICATION

Not everything in *Warlords II* is bigger than before. We took the opportunity to simplify the movement and combat systems. Our experience was that many players (myself included) were ignoring the various side, terrain and combat bonuses, as they were complex, and the explanation was buried in the back of the manual.

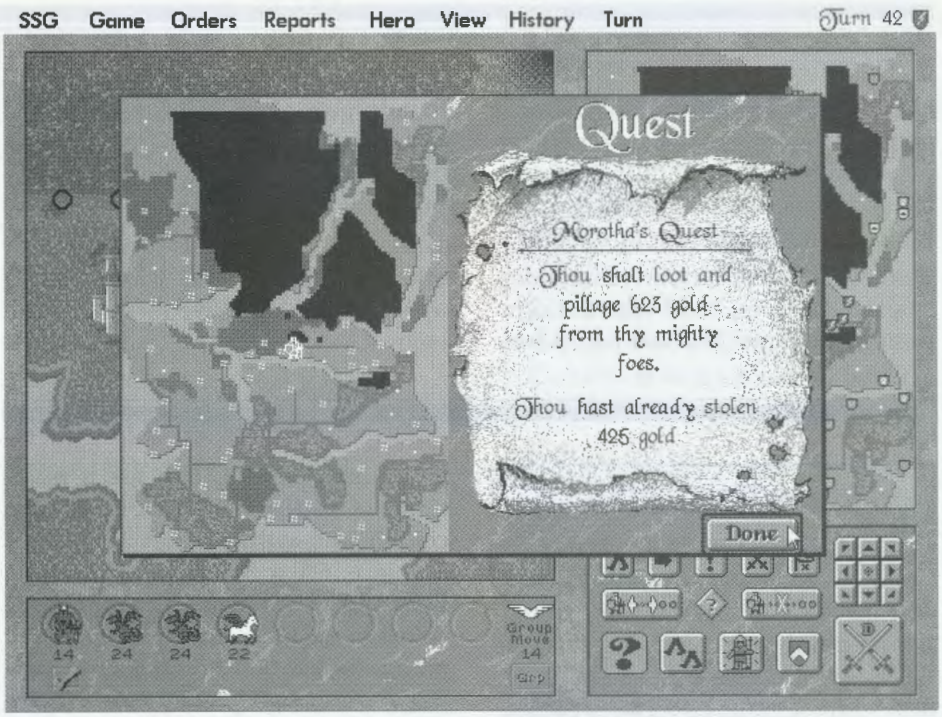
Move bonuses are now given to individual army types, but apply to all armies that they are grouped with. They are also shown directly on the screen. Combat bonuses can apply either to individual armies or stacks, and again are reported directly in the game, so users can easily assess their impact.

NAVAL TRANSPORT

Computer players in the original *Warlords* suffered from a touch of hydrophobia. In *Warlords II*, they take to water like Vikings, and no coastal or river city in the game will ever sleep easy. Of course, human players can assemble their own invasion fleets with equal facility.

HELP SYSTEM

The game includes an extensive online help system. The right mouse button can be used to gain information on just about any object in the game.


SSG Game Orders Reports Hero View History Turn
Turn 42
Quest
Morotha's Quest
Thou shalt loot and pillage 623 gold from thy mighty foes.
Thou hast already stolen 425 gold
Done

A hero's gotta do what a hero's gotta do! It's a tough job!

SSG Game Orders Reports Hero View History Turn
Turn 42
Fighting Order
Order of combat for Serricea
Choose an army.
Then use arrow buttons to move it, or choose a 2nd army to swap positions with
Reset
OK
Cancel

Giants don't die first anymore! You choose the fighting order of your armies

SOUND & MUSIC

Warlords II supports a large number of cards for the extensive digitised sound effects used in the game. The routines also allow for the use of a separate midi card for high quality music. There is a full soundtrack of over one and a half hours of original music for the game.

GAME PHILOSOPHY

(Or SSG says yes more often)

In designing *Warlords II*, we weren't really constrained by anything. Basically, if someone wanted a function, and it made sense, we put it in. You'll find thoughtful touches tucked away in all corners of the game.

Like the ability to save random maps, if you like the look of them, so you can play on them again. Or the way heroes can go up levels, and individual armies can be rewarded for valour in battle.

Or the fact that you can rename sides, cities and heroes, or rewrite the signposts in the game. This was really done to indulge the barely concealed megalomania of SSG staff (the Trout option), but gamers may also find it useful, purely as an aide mémoire.

Warlords II is the result of a collective effort to improve what was already a terrific game, and we're sure you'll enjoy it. ◆

SHIP PAINTING
Cont. from p. 26

If your paint program doesn't handle .LBM/.IFF pictures, then you will have deal with conversions between file formats.

FILE CONVERSION

There are a number of commercial file conversion problems, which should be able to convert .LBM/.IFF files to .PCX or other formats. There are also a number of shareware programs which would do just as well. One is Graphics Workshop by Alchemy Mindworks Inc., P.O. Box 500, Beeton, Ontario L0G 1A0, Canada. 1-416-729-4969. Fax: 1-416-729-4156.

I used Graphics Workshop for DOS which I obtained in the form of the file GRFWRK.ZIP from Library 4 of the GRAPHSUPPORT Forum on Compuserve. It should be readily available elsewhere.

Graphics Workshop is a shareware program with a $40.00 fee, and converts between a wide range of formats, not just .LBM/.IFF and .PCX. If you do use it, please pay the authors.

USING YOUR PAINT PROGRAM

Once the files have been translated into a file format you can use, there are still a number of issues to negotiate. Firstly, the paint program must be able to load and save images at the correct resolution and number of colours.

CAW uses pictures that are a maximum of 640 x 350 pixels, in sixteen colours, and with a palette of 256 colors. The size, 640 x 350 colors is both an EGA and VGA format. The number of colors in the file is critical. Some paint programs, like the Photopaint program that comes with Corel Draw™ 3.0 program, expect files to always have 256 colors. They will restrict a palette to 16 colors, but the file will always be saved as a 256 color file, which will not work.

Also, the paint program must be a bit-mapped graphics program. Corel Draw itself is a vector graphics program, and not suitable.

Lastly, the size of the palette is also very important. In the 640 x 350 EGA mode, the palette can't effectively be modified. The 640 x 350 VGA mode, which has 256K colors available, is the required mode.

MANIPULATING THE PALETTE

It is very unlikely that the files which have been through the Construction Kit's make process, and then a file translation, will end up with the correct palette. Thus, when you finally bring up the picture in your paint program it

		64 COLOR PALETTE			100 COLOR PALETTE			256 COLOR PALETTE		
#	NAME	R	G	B	R	G	B	R	G	B
0	Black	0	0	0	0	0	0	0	0	0
1	Dark Blue	17	0	45	27	0	70	69	0	179
2	Mid Blue	17	28	52	27	44	81	69	112	207
3	Light Blue	19	38	55	30	59	86	77	150	219
4	Dark Green	0	33	0	0	52	0	0	133	0
5	Mid Green	9	41	9	14	64	14	36	163	36
6	Light Green	21	49	15	33	77	23	84	196	59
7	Pale Blue	25	53	57	39	83	89	99	212	227
8	Brown	37	21	0	58	33	0	148	84	0
9	Blue Grey	27	29	33	42	45	52	107	115	133
10	Red	53	0	0	83	0	0	212	0	0
11	Yellow	60	53	0	94	83	0	239	211	0
12	Mid Grey	35	35	35	55	55	55	139	139	139
13	Light Grey	41	41	41	64	64	64	163	163	163
14	Pale Grey	48	48	48	75	75	75	191	191	191
15	White	61	61	61	95	95	95	242	242	242

Fig 17. RGB Values for 64, 100 and 256 Color Palettes

will probably look very strange. Don't panic, it's easy to change.

Your paint program should allow you to manipulate the RGB values of the palette that a picture uses to display colors. If it doesn't, then you're probably in trouble.

The actual values for the colors in the palette are values out of 64, but programs often use values out of 100 or 256. I have listed all three sets of values below. *See fig 17.* Each color has a Red, Green and Blue value.

POTENTIAL PROBLEMS

Some paint programs allow you to rearrange the palette, but they internally re-order the palette to ensure that menus remain visible.

The screen doesn't change, but the internal order of the colors is different. So you think that you've turned color #2 into a nice deep blue, but the program has moved it to slot #5.

When you take these pictures back into the Construction Kit, results are unpredictable. Only careful reading of your paint program manual will alert you to the potential for this problem.

For similar reasons, Windows seems to maintain a firm grip on palette control. This is not usually a problem in 256 color pictures, but my limited experiments in Windows 16 color modes have met with uniform failure.

This is not an atypical Windows experience, and committed Windows users may have solved these problems. If you haven't, I recommend avoiding Windows, and using paint and conversion programs in DOS only.

Finally, if you work your way through this maze and start producing stunning warships, send me a copy of your work. I'd love to see what a really talented person could do with this utility. ◆

Help

If you need some, fax me here at our Australian office

61 2 819 7737

BIBLIOGRAPHY

CHESNAU, Roger (ed).	*All the Worlds Fighting Ships 1922-1946*. Conway Maritime Press, London, 1980.
FRIEDMAN, Norman.	*U.S. Aircraft Carriers*. An Illustrated Design History. Arms and Armour Press, London, 1983.
FRIEDMAN, Norman.	*U.S. Battleships*. An Illustrated Design History. Arms and Armour Press, London, 1985.
FRIEDMAN, Norman.	*U.S. Cruisers*. An Illustrated Design History. Arms and Armour Press, London, 1985.
FRIEDMAN, Norman.	*U.S. Destroyers*. An Illustrated Design History. Arms and Armour Press, London, 1982.
GRAY, Randal (ed).	*All the Worlds Fighting Ships 1906-1921*. Conway Maritime Press, London, 1985.
JENTSCHURA, H. (et al).	*Warships of the Imperial Japanese Navy 1869-1945*. Arms and Armour Press, London, 1977
LENTON, H. & J. Colledge.	*Warships of World War II*. Ian Allen, London, 1973.
RAVEN, Alan & J. Roberts.	*British Battleships of World War Two*. Arms and Armour Press, London, 1976.
SILVERSTONE, Paul H.	*US Warships of World War 2*. Ian Allan, London, 1982.
WATTS, A.J.	*Japanese Warships of World War II*. Ian Allan, London, 1974.

LETTERS
Continued from p. 42

old titles too much you should go back and have a look at the dates on the box. Most of the games you are so down on were designed several years ago. They are not '90s technology but they are still selling, why?, because they were great games when they came out and they still are. That is not to say that we aren't doing anything new here at SSG, quite the opposite. The new *Warlords II* is, without a shadow of a doubt, the best game we have ever done (although the boss is partial to *Carriers* and the *Construction Kit*). And what do we find in *Warlords II*, mouse driven interface, on-line help, animation sequences, a full soundtrack including speech, in fact most of the things you asked for. In fact we are already looking far beyond *Warlords II*, in the next few years we intend to bring out some dazzling new titles which we're sure you'll love. What are they, Ah that'd be telling. What great ideas lurk in the heart of SSG, ha ha, only we know!

Dear Sirs,

Congratulations on your *Carriers at War* for the IBM. It really is a very good simulation. Also I would like to complement you on your Run 5 Issue # 18. I really liked the Saipan scenario.

Please continue with the conversion of old Apple II *Battlefront* scenarios to the IBM format. Could you try to do a scenario for the "Cobra" operation? I would also be very interested in other European battles for the *Decisive Battles* system.

Please, please come out with a system for the Napoleonic era. Surely this can be adapted for *Decisive Battles*.

Keep up the good work and more power to you.

Yours truly,

Victor Bocaling

Manila, Philippines ◆

SSG LEAPS INTO THE FUTURE

by your roving (raving) reporters

Brett Harrison and Stephen Hand

So! You've heard the rumours!

Big things are afoot at SSG. Big things! (not just the editor's paunch)

Yes! The future of gaming is being determined here at SSG. We have games planned into the next century. Some examples follow:

Warlords VI. Warlords in Real Reality. Every time you play, the computer sends a signal to SSG HQ, and we send hired thugs dressed as fantasy warriors around to your house to kick down the door, steal your possessions, beat you to a pulp, and burn the lot. The ultimate reality in fantasy gaming.

Warlords VII. Warlords for Prison Inmates, as the SSG staff try to continue their work in the aftermath of Warlords VI.

Carriers at War VI. Virtual Reality mode. Includes life preserver and Dramamine

Carriers at War IX. Back to Basics. The game box contains a bathtub and an assortment of plastic ships. You supply the water.

Reach For The Stars XII. We send you to the Moon, and let you figure the rest out for yourself. Estimated cost $17 000 000 000.

Battlefront XIII. You buy the game, we flatten your suburb, dig trenches and give you an old army surplus M4 Sherman tank.

Decisive Battles XVII. The game comes in a big box, which contains a number of General's uniforms, the time travelling phone booth from Bill & Ted's Excellent Adventure, and a list of every battle in history, including the names, addresses and personal descriptions of all the Generals. You take it in turns impersonating one general after another, "seeing if you can do better" than they did. If you make it back, you get to play Ian Trout at a wargame (his choice).

Decisive Battles XVIII. The Battle for Sanity. No, not the average SSG meeting: You return from failing to defeat all the great general's of history to find that Ian Trout beat them all, changed the past, has been proclaimed Emperor of the Universe and has stolen your girlfriend.

EDITOR'S CHANCE
Continued from p. 3

WORK IN PROGRESS. . .

Carriers at War II

Fleet Carrier Operations in Southeast Asia, 1936 - 1946

We had initially titled this one *Japan Sweeps South*, but in the end opted for the far more original *Carriers at War II*.

My favorite scenario is Plan Orange. Still under development, this hypothetical battle pits a large American Battle Fleet (16+ BBs and 2 CVs) attempting to push through a resupply mission to the Philippine capital of Manilla in the summer of 1936. Japan's ten pre-war battleships, two fleet carriers and several light carriers, together with a motley collection of land-based bi-plane and monoplane aircraft are ready to contest the American moves. A similar collection of mid-30s, land-based US aircraft will be on hand to help out.

Surface combat promises to be the mechanism of decision, although the contribution of puny, bi-plane, carrier-borne aircraft can't be ruled out entirely.

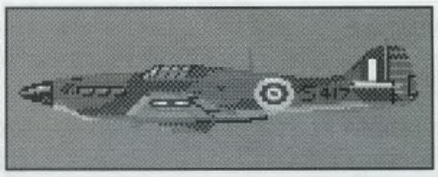
British and Dutch air and naval forces make their first appearance in the Force Z, Java Sea, Port Darwin and Trincomalee scenarios while the Americans have to wait until the Leyte Gulf, Okinawa and Operation Olympic scenarios for another appearance.

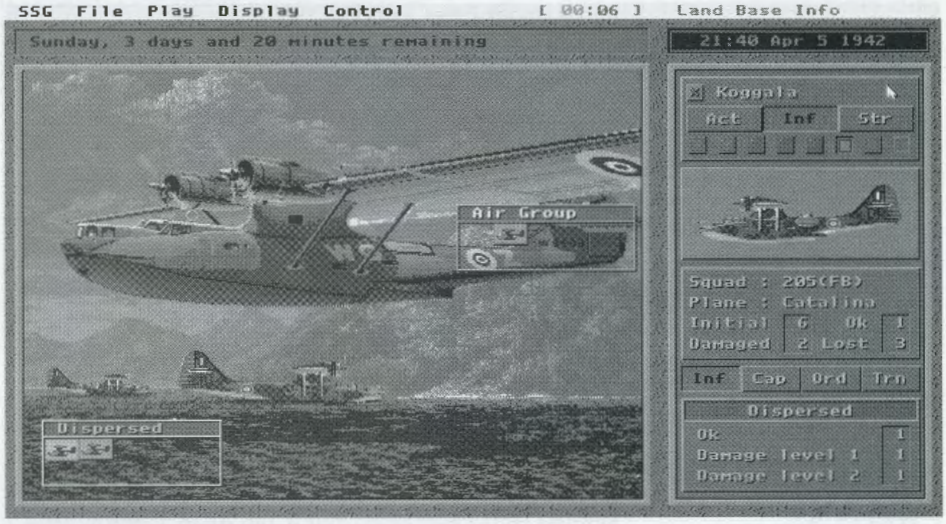
In particular, the Japanese operations against Malaya and Java in the early months of the war offer some very intesting possibilities. It was only plain bad luck that the British warships HMS Prince of Wales and HMS Repulse were not accompanied by at least one, tough British flat-top.

In the Okinawa and Operation Olympic scenarios, the Japanese have extensive Kamikaze air forces available.

Carriers at War II is completely compatible with *CAW Construction Kit* and will come with new graphic files to extend the range of aircraft and warships available for use within the system.

A couple of examples of the new artwork for the game accompany these notes. ◆





The British Seaplane Base picture is another example of Nick Stathopoulos' superb artwork!

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Screen Shots are from the IBM version

To purchase *Carriers at War*, visit your local retailer or call SSG Inc. on 904-494-9373 (fax 904-494-9374) in North America or call SSG P/L on 02-819-7199 (fax 02-819-7737) if you live anywhere else. RRP for the IBM Version is $US 60.00 (North America) or $AUD 75.00 (Australia and elsewhere)

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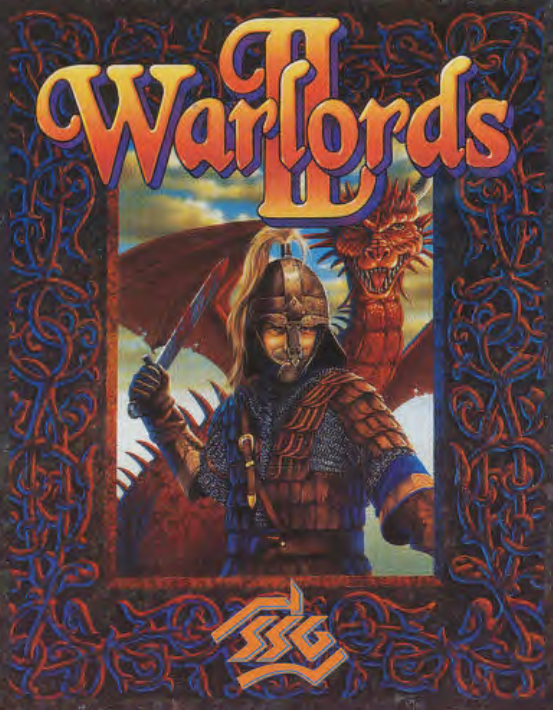

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